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## ERRATA.

Page 8, line 13, for 1′ 7″ and 7′ 4″, read 1″ 7‴ and 7″ 4‴.
14, for 4′ 7″ and 2′ 3″, read 4″ 7‴ and 2″ 3‴.
15, for 4″ read 4‴.
40, for 2′ 1″ and 9′, read 2″ 1‴ and 9″.
41, for 3′ 7″ read 3″ 7‴.
42, for 10″ and 1′, read 10‴ and 1″.

„ 36, 2nd col., lines 6 and 7, for "Sphærinum" read "Sphæronum."

„ 38, 1st col., line 2 (from bottom), for "cevictus" read "cerritus."

„ 196, line 5, for "closely" read "coarsely."

„ 535, line 8 (from bottom), for "(1861)" read "(1801)."

„ 556, line 13, for "ii" read "iii."

„ 639, line 21 (from bottom), for "Schum." read "Fieb."

„ 652, line 7, for "*rubricata*" read "*intricata*."

„ 653, lines 11 and 20, for "*Toweri*" read "*Poweri*."

VOLUME FOR 1875.

Page 118, line 12 (from the bottom), for "*Phytocoridæ*" read "*Capsidæ*."

In the Index, p. lxvi, *Cecidomyia botularia* has been placed among the *Hymenoptera* instead of among the *Diptera*.

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| 1869 | | Robinson-Douglas, William Douglas, F.L.S., F.R.G.S., *Orchardton, Castle-Douglas*, N.B. |
| 1872 | S. | Rothera, G. B., *High Street Place, Nottingham.* |
| 1868 | | Rothney, G. A. J., *Calcutta.* |
| 1876 | | Rutherford, David Grey, *Surrey House, Forest Hill*, S.E. |
| 1876 | † | Rye, Edward Caldwell, F.Z.S., *Parkfield, Putney*, S.W. |
| 1865 | | Rylands, Thomas Glazebrook, F.L.S., F.G.S., *Highfields, Thelwall, Warrington.* |
| 1875 | | Sallé, Auguste, 13, *Rue Guy de la Brosse, Paris.* |
| 1866 | † | Salvin, Osbert, M.A., F.R.S., F.L.S., &c., 6, *Tenterden Street, Hanover Square*, W., and *Brookland Avenue, Cambridge.* |
| 1865 | † | Saunders, Edward, F.L.S., 2, *Spencer Park, Wandsworth*, S.W. |
| 1861 | † | Saunders, G. S., *Spencer Park, Wandsworth*, S.W. |
| * | | Saunders, Sir Sidney Smith, C.M.G., *Gatestone, Central Hill, Upper Norwood*, S.E. |
| * | † | Saunders, William Wilson, F.R.S., F.L.S., &c., *Raystead, Worthing.* |
| 1865 | | Schaufuss, L. W., Ph. D., M. Imp., L. C. Acad., &c., *Dresden.* |
| 1875 | † | Sealy, Alfred Forbes, *Cochin, South India.* |
| 1864 | | Semper, George, *Altona.* |
| 1862 | | Sharp, David, M.B., *Eccles, Thornhill, Dumfriesshire.* |
| 1847 | | Shepherd, Edwin, 21, *Albert Terrace, Clapham Road*, S.W. |
| 1852 | | Sheppard, Edward, F.L.S., 18, *Durham Villas, Kensington*, W. |
| 1867 | | Sidebotham, Joseph, *The Beeches, Bowdon, Cheshire.* |
| 1850 | | Smith, Frederick, 27, *Richmond Crescent, Islington*, N. |

| Date of Election. | | |
|---|---|---|
| 1869 | | Smith, Henley Grose, *Warnford Court, Throgmorton Street*, E.C. |
| * | † | Spence, W. B. |
| 1848 | † | Stainton, Henry Tibbats, F.R.S., F.L.S., &c., *Mountsfield, Lewisham*, S.E. |
| 1862 | | Stevens, John S., 38, *King Street, Covent Garden*, W.C. |
| 1837 | | Stevens, Samuel, F.L.S., *Loanda, Beulah Hill, Upper Norwood*, S.E. |
| 1876 | | Swale, Harold, 48, *St. George's Road, S. Belgravia*, S.W. |
| 1866 | | Swanzy, Andrew, F.L.S., *Sevenoaks.* |
| 1876 | | Swinton, A. H., *Binfield House, Waterden Road, Guildford.* |
| 1854 | S. | Thompson, Miss Sophia, *Barn Hill, Stamford.* |
| 1856 | | Thomson, James, 12, *Rue de Presbourg, Place de l'Etoile, Paris.* |
| 1838 | | Thwaites, George Henry Kendrick, Ph. D., F.R.S., F.L.S., Director of the Royal Botanic Garden, *Peradenia, Ceylon.* |
| 1853 | S. | Tompkins, H., 28, *Tavistock Square*, W.C. |
| 1859 | † | Trimen, Roland, F.L.S., *Colonial Office, Cape Town, Cape of Good Hope.* |
| 1874 | | Tuely, Nathaniel Clissold, F.L.S., *Mortimer Lodge, Wimbledon Park*, S.W. |
| 1869 | | Vaughan, Howard, 55, *Lincoln's Inn Fields*, W.C. |
| 1849 | | Vaughan, P. H., *Redland, Bristol.* |
| 1866 | | Verrall, G. H., *Friar's Cottage, Lewes, Sussex.* |
| 1876 | | Wakefield, Charles Marcus, F.L.S., *The Elms, Uxbridge.* |
| 1870 | | Walker, Rev. Francis Augustus, M.A., F.L.S., *Dry Drayton Rectory, Cambridge.* |
| 1858 | | Wallace, Alexander, M.D., *Trinity House, Colchester.* |
| 1863 | | Wallace, Alfred Russel, F.L.S., F.Z.S., &c., *Rosehill, Dorking.* |
| 1866 | | Walsingham, Thomas de Grey, Lord, M.A., F.Z.S., &c., 23, *Arlington Street*, W. |
| 1866 | | Ward, Christopher, F.L.S., *Savile Road, Halifax.* |
| 1874 | S. | Ward, Allan Ogier, 3A, *King William Street*, E.C. |
| 1875 | | Ward, Frederick Henry, *Springfield, Tooting*, S.W. |
| 1850 | | Waring, S. L., *The Oaks, Norwood*, S.E. |
| 1869 | | Waterhouse, Charles O., *British Museum*, W.C. |
| * | | Waterhouse, George R., F.Z.S., &c., *British Museum*, W.C. |
| 1869 | | Websdale, C. G., 78, *High Street, Barnstaple.* |
| 1845 | | Weir, John Jenner, F.L.S., TREASURER, 6, *Haddo Villas, Blackheath*, S.E. |
| 1876 | | Western, Edward Young, 8, *Craven Hill, Bayswater*, W. |
| * | | Westwood, John Obadiah, M.A., F.L.S., &c., PRESIDENT, Hope Professor of Zoology, *Walton Manor, Oxford.* |
| 1868 | † | White, F. Buchanan, M.D., F.L.S., *Perth*, N.B. |
| 1865 | | White, Rev. William Farren, *Stonehouse Vicarage, Gloucestershire.* |
| 1874 | | Wilson, Owen, *Cwmffrwd, Carmarthen.* |
| 1843 | | Wollaston, T. Vernon, M.A., F.L.S., 1, *Barnepark Terrace, Teignmouth, Devon.* |
| 1874 | | Wood-Mason, James, Curator of the Indian Museum, *Calcutta.* |
| 1862 | | Wormald, Percy C., 2, *Clifton Villas, Highgate Hill*, N. |
| 1866 | | Wright, E. Perceval, M.A., M.D., F.L.S., &c., Professor of Botany, *Trinity College, Dublin.* |
| 1865 | S. | Young, Morris, *Free Museum, Paisley.* |

# Bye-Laws

OF THE

# ENTOMOLOGICAL SOCIETY

## OF LONDON,

AS AMENDED AT A SPECIAL MEETING HELD ON THE 7TH JUNE, 1876.

### CHAP. I. *Object.*

THE ENTOMOLOGICAL SOCIETY OF LONDON is instituted for the improvement and diffusion of Entomological Science.

### CHAP. II. *Constitution.*

The Society shall consist of Honorary Members, Corresponding Members, Foreign Members, Ordinary Members, and Annual Subscribers.

### CHAP. III. *Management.*

The affairs of the Society shall be conducted by a Council consisting of thirteen Members, to be chosen annually, four of whom shall not be re-eligible for the following year. Five shall be a quorum.

### CHAP. IV. *Officers.*

The Officers of the Society shall consist of a President; three Vice-Presidents; a Treasurer; two Secretaries; and a Librarian. The Officers shall be chosen annually from amongst the Members of the Council. No Member shall be President, or a Vice-President, more than two years successively.

## Chap. V. *Removal or Resignation of Officers.*

1. For any cause which shall appear sufficient to a majority thereof the Council shall have power to suspend any Officer of the Society from the exercise of his office, or to remove him and declare such Office vacant.

2. In the event of any vacancy occurring in the Council or Officers of the Society, at the next meeting of Council after such vacancy has been made known, the Council shall recommend to the Society the name of some person duly qualified to be elected to the vacant situation; and the next Ordinary Meeting of the Society shall be made a Special Meeting and the Members summoned accordingly, and the Election shall take place as provided for at the Annual Meeting, Chap. XX.

## Chap. VI. *President.*

1. The duty of the President shall be to preside at the Meetings of the Society and Council, and regulate all the discussions and proceedings therein, and to execute, or see to the execution of the Bye-laws and orders of the Society.

2. In case of an equality of Votes, the President shall have a double or casting Vote.

## Chap. VII. *Vice-Presidents.*

1. The Vice-Presidents shall be nominated by the President. Such nomination shall be declared at the Ordinary Meeting next after the election of the President in every year.

2. In the absence of the President, a Vice-President shall fill his place, and shall for the time being have all the authority, power and privilege of the President.

3. In the absence of all the Vice-Presidents, a Member of the Council shall preside; and if no Member of the Council shall be present at any Ordinary Meeting, the Members present shall appoint by a majority to be Chairman such Member as they shall think fit; and the Member of Council so presiding, or the Member so appointed, shall for the time being have all the authority, power and privilege of the President.

## Chap. VIII. *Treasurer.*

1. It shall be the duty of the Treasurer to demand and receive for the use of the Society all sums of money due or

payable to the Society, and to disburse all sums payable by the Society out of the funds in his hands.

2. No payment exceeding £5, excepting for rent or taxes, shall be made by the Treasurer without the consent of the Council.

3. The Treasurer shall keep a book of Cheque Receipts for admission fees and annual payments; each Receipt shall be signed by himself, the date of payment and name of Member or Subscriber paying being written both on the receipt and on the part of the cheque which is left in the book.

4. The Treasurer shall demand all arrears of annual payment, after such payment shall have been due three months.

5. The accounts of the Treasurer shall be audited annually, previously to the Annual Meeting, by a Committee of three Members of the Council and three Members of the Society, to be appointed by the President at the Ordinary Meeting in December, of which Committee three shall be a quorum. The Treasurer shall furnish the Auditors with a detailed account of all receipts and disbursements down to the 31st December.

## Chap. IX. *Secretaries.*

1. It shall be the duty of the Secretaries to keep a list of all the Members of and Subscribers to the Society, together with their addresses; to summon Meetings (when necessary) of the Society and the Council; to conduct and produce to the Council all correspondence in any way connected with the Society at the next Meeting after such correspondence shall have been received or taken place; to take Minutes of the Proceedings at Meetings of the Society and the Council; to edit the Transactions and Journal of Proceedings; and generally, to act under the direction of the Council in all matters connected with the welfare of the Society.

2. In the absence from any Meeting of the Society or the Council of both the Secretaries, Minutes of the Proceedings shall be taken by a Member, whom the President shall appoint for the occasion.

## Chap. X. *Librarian.*

1. It shall be the duty of the Librarian to take care of the Library and MSS., and keep a Catalogue thereof, with the

names of the Donors; to call in all Books borrowed, and see that the Library Regulations are carried into effect.

2. The Council may employ a Sub-Librarian, who shall receive such remuneration as the Council shall from time to time determine, and shall be subject to such Rules and Orders as shall from time to time be given to him by the Council.

## Chap. XI. *Library Regulations.*

1. No Member or Subscriber shall, without special permission of the Council, be allowed to borrow from the Library more than four volumes at one time, or, without leave of the Librarian, to retain any volume longer than one Month.

2. If any book be torn, injured, lost, or not forthcoming when demanded by the Librarian, full compensation shall be made for the same by the borrower.

3. The Librarian shall call in all books borrowed from the Library on the 5th day of January and 5th day of July in every year: and in case the same be not returned on or before the Ordinary Meeting of the Society in the following month, notice thereof shall be given by him to the Council, who shall then direct a second notice to be sent to the Member or Subscriber retaining any book, and in case the same be not returned within the further space of four weeks from the date of such second notice so sent, such Member or Subscriber shall in future be disqualified from borrowing books from the Library without the special permission of the Council.

4. The Library shall be open to the Members and Subscribers between the hours of one and six p.m. on every week-day, except Saturday, and on that day between one and three p.m.

5. No Stranger shall be allowed access to the Library unless introduced by a Member or Subscriber; but a note addressed to the Librarian or Secretary shall be deemed a sufficient introduction.

## Chap. XII. *Election of Members and Subscribers.*

1. Every Candidate for admission into the Society shall be proposed by three or more Members, who must sign a Certificate in recommendation of him. The Certificate shall specify the name and usual place of residence of the Candidate.

2. The Certificate for a Member, having been read at one

of the Ordinary Meetings, shall be suspended in the room, read again at the following Ordinary Meeting, and the person therein recommended shall be balloted for at the next Ordinary Meeting.

3. The Certificate for a Subscriber, having been read at one of the Ordinary Meetings, shall be suspended in the room, and the person therein recommended shall be balloted for at the next Ordinary Meeting.

4. The method of voting for the election of Members and Subscribers shall be by ballot, and two-thirds of the Members balloting shall elect.

5. The Election of any Ordinary Member shall be void unless the admission fee shall be paid within twelve months after the date of his Election; the Council shall, however, possess a discretionary power to extend the time of payment.

6. Members and Subscribers shall sign the Obligation Book of the Society at the first Ordinary Meeting of the Society at which they are present, and shall then be admitted by the President.

## Chap. XIII. *Admission Fee and Annual Contribution.*

1. The Admission Fee for a Member shall be £2 : 2*s.*, the Annual Contribution £1 : 1*s.*

2. The Annual Contribution for a Subscriber shall be £1 : 1*s.*, without Admission Fee.

3. The composition for a Life Member in lieu of the Annual Contribution shall be £15 : 15*s.*

4. The Annual Contribution shall become due on the 1st day of January in advance; any Member or Subscriber elected after September will not be called upon for his Contribution for that year.

## Chap. XIV. *Withdrawing and Removal of Members and Subscribers.*

1. Every Member or Subscriber, having paid all sums due to the Society, shall be at liberty to withdraw therefrom upon giving notice in writing to the Secretary.

2. Whenever written notice of a motion for removing any Member or Subscriber shall be delivered to the Secretary, signed by the President or Chairman for the time being on

the part of the Council or by five or more Members, such notice shall be read from the chair at the two Ordinary Meetings immediately following the delivery thereof, and the next following Ordinary Meeting shall be made a Special Meeting and the Members summoned accordingly, when such motion shall be taken into consideration and decided by ballot; whereat if a majority of the Members balloting shall vote that such Member or Subscriber be removed, he shall be removed from the Society.

3. Whenever any Member of the Society shall be in arrear for three years in the payment of his Annual Contribution, notice thereof in writing shall be given or sent to him by the Treasurer, together with a copy of this section; and in case the same shall remain unpaid, the Treasurer shall give notice thereof to the Council, who shall cause a second similar notice to be sent to the Member, with an intimation that at the expiration of three months he will be liable to have his name erased from the list of Members. In default of payment, the Council may order his name to be erased accordingly.

4. Whenever the Annual Contribution of a Subscriber shall be in arrear one year, such Subscriber shall have his name erased from the list of Subscribers and cease to belong to the Society.

## Chap. XV. *Privileges of Members and Subscribers.*

1. Members have the right to be present, to state their opinions, and to vote, at all General Meetings; to propose Candidates for admission into the Society; to introduce Visitors at General Meetings of the Society; to have personal access, and to introduce scientific strangers, to the Library; and to purchase the Transactions of the Society at reduced prices.

2. Members of and Subscribers to the Society resident more than fifteen miles from London, who shall have paid the Annual Contribution for the year, shall be entitled to receive a copy of the Transactions published during the year without further payment. Those resident in or within fifteen miles from London, and who, in addition to the Annual Contribution, shall at or before the April Meeting pay a further sum of half-a-guinea, shall be entitled to receive a copy of the Transactions in like manner.

3. Members shall be eligible to any office in the Society, provided they are not more than one year in arrear in the payment of the Annual Contribution.

4. A Member shall not be entitled to vote on any occasion until he shall have paid his Contribution for the year last past.

5. Subscribers enjoy all the privileges of Members excepting those of voting at the Meetings, holding office in the Society, and proposing Candidates. Subscribers have no claim upon or interest in the property of the Society.

## Chap. XVI. *Foreign and Corresponding Members.*

1. Any Foreigner, not resident in the United Kingdom, who has distinguished himself as an Entomologist, or who has shown himself able and willing to promote the ends for which the Society is founded, may be elected a Foreign Member; his Annual Contribution shall be £1 : 1*s.*, and he shall be entitled to the same privileges as an Ordinary Member. Foreign Members shall be exempt from the payment of any Admission fee; and shall not be required to sign the Obligation Book until present at an Ordinary Meeting of the Society, and when so present shall be admitted as other Members.

2. Foreigners and others not resident in the United Kingdom may be elected as Corresponding Members, who shall not be subject to the payment of any Admission fee or Annual Contribution, and who shall be entitled to a copy of the Journal of Proceedings of the Society, but not to the Transactions; which, however, may be purchased by them at the reduced price paid by the Ordinary Members. The Membership and Privileges of Corresponding Members shall however cease in case they shall at any future time be continuously resident in the United Kingdom for the space of twelve months, unless sanctioned, in the case of any particular Member, by a special vote of the Council.

## Chap. XVII. *Honorary Members.*

1. Every person proposed as an Honorary Member shall be recommended by the Council; and shall be balloted for, and if elected, be liable to be removed in the like form and manner, and be subject to the same rules and restrictions, as an Ordinary Member.

2. Honorary Members shall be exempt from the payment of Fees and Contributions, and shall possess all the privileges of Ordinary Members.

3. No resident in the United Kingdom shall be an Honorary Member.

4. The number of Honorary Members shall not exceed ten.

## Chap. XVIII. *Ordinary Meetings of the Society.*

1. The Ordinary Meetings of the Society shall be held on the first Wednesday in each month (except January), beginning at seven o'clock in the evening, or at such other time as the Council shall from time to time direct.

2. At the Ordinary Meetings the order of business shall be as follows :—

(1.) The names of the Visitors present at the Meeting shall be read aloud by the President.

(2.) The Minutes of the last Meeting shall be read aloud by one of the Secretaries, proposed for confirmation by the Meeting, and signed by the President.

(3.) The Presents made to the Society since the last Meeting shall be announced and exhibited.

(4.) Certificates in favour of Candidates for admission into the Society shall be read, and Candidates shall be balloted for.

(5.) Members and Subscribers shall sign their names in the Obligation Book, and be admitted.

(6.) Exhibitions of specimens, &c. shall be made.

(7.) Entomological communications shall be announced and read either by the Author or one of the Secretaries.

(8.) When the other business has been completed, the persons present shall be invited by the President to make their observations on the communications which have been read, and on the specimens or drawings which have been exhibited at the Meeting.

3. All Memoirs which shall be read at any Meeting of the Society shall become the property of the Society, unless otherwise stipulated for previous to the reading thereof.

4. No Motion relating to the government of the Society, its Bye-laws, the management of its concerns, or the election,

appointment or removal of its officers, shall be made at any Ordinary Meeting.

## Chap. XIX. *Special Meeting.*

1. Upon the requisition of any six or more Members, presented to the President and Council, a Special General Meeting of the Society shall be convened; a notice thereof shall be sent to every Member whose last known residence shall be in the United Kingdom, at least seven days before such Meeting shall take place; and the nature of any proposition to be submitted to such Meeting shall be stated in such Notice.

2. No vote shall be taken at any Special Meeting unless nine or more Members shall be present.

## Chap. XX. *Annual Meeting.*

1. The Annual Meeting of the Society shall be held on the third Wednesday in January.

2. The objects of the Meeting shall be to receive from the Council, and hear read, their Annual Report on the general concerns of the Society; and to choose the Council and Officers for the ensuing year.

3. The Council for the time being shall annually cause to be prepared two Lists, one of which (No. 1 in the Schedule hereto) shall contain the names of Members whom they shall recommend to be re-elected and of other Members to be elected into the Council; and the other List (No. 2) shall contain the names of such persons as they shall recommend to fill the offices of President, Treasurer, Secretaries and Librarian for the year ensuing; which Lists shall be read at the Ordinary Meeting in December, and shall then be fixed up in the room until the day of election. And copies of such Lists shall be transmitted to every Member whose last known residence shall be in London, or within twenty miles thereof, at least seven days before the Annual Meeting shall take place.

4. The President shall appoint two or more Scrutineers from the Members present, not being Members of the Council, to superintend the ballots and report the results to the Meeting.

5. The Secretaries, assisted by the Treasurer, shall prepare a List of the Members entitled to vote, and each Member voting shall give his name to the Scrutineers to be marked on

the said List, and shall then put his balloting lists into the respective glasses to be provided for such occasion.

6. Any balloting List containing a greater number of names proposed for any office than the number to be elected to such office, shall be wholly void, and be rejected by the Scrutineers.

7. The Ballot for the Council shall remain open for one quarter of an hour, at the least; and the Ballot for the Officers for one quarter of an hour, at the least, after the result of the Ballot for the Council shall have been declared.

8. No Ballot shall be taken unless nine or more Members shall be present.

9. If from any cause an election shall not take place of persons to fill the Council, or any of the offices aforesaid, then the election of the Council and Officers, or the election of Officers, as the case may be, shall be adjourned until the next convenient day, of which notice shall be given in like manner as is directed for the Annual Meeting.

## Chap. XXI. *Transactions and Journal of Proceedings.*

1. The Transactions shall consist of such Papers communicated to the Meetings of the Society as the Council shall order to be published therein.

2. The Transactions shall be published quarterly, and at such prices as the Council shall direct for each Part or Volume; but the price of each Part or Volume to any Member or Subscriber, who shall not be in arrear in the payment of his Annual Contribution, shall not exceed three-fourths of the price charged to the public.

3. Authors of Memoirs published in the Transactions shall be allowed twenty-five copies of their communications gratis. If any additional number be required, the entire expense thereof shall be paid for by the Authors.

4. A Journal of Proceedings of the Society shall also be published, containing Abstracts of the Papers read and Notices of other Matters communicated at the Ordinary Meetings of the Society. The Proceedings shall be bound up with the Transactions.

## Chap. XXII. *Alteration of the Bye-Laws.*

Any of the Bye-Laws of the Society may at any time be repealed or altered, or others adopted in lieu thereof, at a

Special Meeting of the Society, to be held after a Notice, given to the President and Council, signed by six Members at least and specifying the intended repeal or alteration, has been read at three Ordinary Meetings of the Society.

## THE SCHEDULE REFERRED TO IN CHAPTER XX.

### No. 1.

*Form of List for the Council.*

List of Members of the present Council recommended to be re-elected at the Election on the day of January, 18 .*

| | |
|---|---|
| A. B. | |
| C. D. | |
| E. F. | |
| G. H. | |
| I. J. | |
| K. L. | |
| M. N. | |
| O. P. | |
| Q. R. | |

List of Members recommended to be elected into the Council.

| | |
|---|---|
| S. T. | |
| U. V. | |
| W. X. | |
| Y. Z. | |

* If any of the Names in this List be objected to, they must be struck out before the Ballot, and other names may be substituted in the blank spaces left for that purpose.

No. 2.

*Form of List for the Officers.*

List of Persons recommended by the present Council to be appointed to the offices of President, Treasurer, Secretaries and Librarian, at the Election on the day of January, 18 .*

| | | |
|---|---|---|
| President ..... | Z. A. | |
| Treasurer .. .. .... | Y. B. | |
| Secretaries ..... | X. C.<br>W. D. | |
| Librarian ..... | V. E. | |

* If any of the Names in this List be objected to, they must be struck out before the Ballot, and other names may be substituted in the blank spaces left for that purpose.

THE

TRANSACTIONS

OF THE

ENTOMOLOGICAL SOCIETY

OF

LONDON

FOR THE YEAR 1876.

I. *Additions to the list of Geodephagous* Coleoptera *of Japan, with synonymic and other remarks.* By H. W. Bates, F.L.S.

[Read 5th January, 1876.]

Since the publication of my paper on the Geodephagous *Coleoptera* of Japan, in the Transactions of the Society for 1873, Part III., a number of genera and species belonging to the group treated of have been added to our knowledge of the Fauna. In drawing up a list of these I have availed myself of the opportunity of making various corrections and synonymical remarks. The accompanying Plate refers to some of the more important new species described in the former paper.

*Notiophilus impressifrons* (Mor.), Putz. Ann. Soc. Ent. Belg. t. xviii. p. 10.

North of Nipon. The name *impressifrons* is preoccupied by Chaudoir, 1842.

*Carabus DeHaanii* (Chaud.) Thomson, in his *Opuscula Entomologica*, Fascic. vii. p. 728, describes a *C. japonicus* (Mots.), which appears to be the same as this species, judging from the words, "subcæruleus, elytris catenis 4; . . . tibiis anticis simplicibus." But how this learned entomologist arrives at the conclusion that his

species is the *C. japonicus* of Motschulsky he does not say. Nothing that Motschulsky says in the two descriptions he published can be strained to harmonize with Thomson's diagnosis.

*C. maiyasanus* (Bates). Thomson has erred, also, in his determination of this species. I find it difficult to understand how an entomologist, in a group like the present, can suppose a description like this—"Supra cærulescenti-niger, elytris striis impunctatis" (without mention of red tibiæ)—can apply to a species of which the original and only description says, "æneo-cupreus, elytris conspicue crenato-striatis, tibiis et tarsis piceo-rufis;" these characters being constant in all the numerous examples taken.

*Carabus Kæmpferi*, Thomson, l. c. p. 729.

Thomson's diagnosis fits very well *C. insulicola* (Chaud.) He has made, besides, an unfortunate choice of a name, *C. Kæmpferi* being the original, although MS. name of *C. DeHaanii*.

Among the numerous minor characters discovered by Thomson, with his well known originality, in the *Carabi* and allied genera, is the dilatation in many of the Japanese species of the inner under-edge of the male fore tibiæ, about the middle. This character exists in different degrees in the various species allied to *C. DeHaanii*. In *DeHaanii* (as in the Chinese *C. prodigus*, *fiduciarius*, &c.) the tibiæ are simple. In *C. Albrechtii* (and its numerous varieties of colour and form) the dilatation is very slight, gradual and rounded; in *C. jaconinus*, *C. insulicola* and *C. maiyasanus* it is distinctly angular, but with modifications according to the species.

*Carabus Van Volxemi*, Putzeys, Ann. Soc. Ent. Belg. t. xviii. (1875) p. 2.

I am indebted to M. Putzeys for a specimen of this species, which is very distinct from all those brought home by Mr. Lewis.

*Carabus opaculus*, Putz. l. c. p. 4.

Yesso. Apparently only one example taken.

*Leistus laticollis*, Moraw. Mél. biol. iv. 197, No. 15, Putzeys, l. c.

*Nebria Lewisii*, Bates, Entom. Monthly Mag. vol. xi. p. 22.
Kawatchi.

*Clivina Parryi*, Putz. = *C. lata* (Putz.), Bates, Tr. Ent. Soc. 1873, p. 238.

I failed to see any difference between the Japanese insect and an authentic example of *C. lata*, but the greater experience of M. Putzeys has decided that it is not that species.

*Tachycellus falsus.*

*Harpalus lævicollis*, Bates, l. c. p. 261 (nec Dufts.)

*Harpalo lævicolli* Dufts. simillima; paulo convexior, piceus, antennis totis pedibusque fulvis; capitis foveis frontalibus sulciformibus utrinque usque ad oculi marginem extensis.

This species, which Morawitz, apparently, as well as myself, mistook, on account of its great similarity, for the *H. lævicollis* of Europe, I find on closer examination to be quite distinct and not to belong to the genus. It has, in fact, the oblique frontal sulci or sharply impressed lines of *Bradycellus* and the allied genera, and agrees in all essential points with *Tachycellus*. The basal ventral segment of the ♂ has not the pubescent fovea of the males of *Tachycellus*, but it has a rudimentary impression in the same position.

I do not adopt the name *rugicollis*, Motsch., for the species, as Von Harold, in his notes on Japanese Coleoptera (Abhandl. Nat. Ver. Bremen, iv. 1875, p. 285), assures us it belongs to *H. japonicus*, Moraw.

*Oxycentrus Argutoroïdes*, *Harpalus* id., Bates, l. c. p. 261. (Plate I. fig. 3.)

This curious species belongs to the genus *Oxycentrus*, Chaud. (Bull. Mosc. 1854, ii. p. 345), of which the only described species, *O. parallelus*, from Northern India, is very distinct from the Japanese one. I have two others, from Rangoon and Borneo;* the genus, therefore, appears

* *Oxycentrus angustus* ♂. Angustus, parallelogrammicus, piceo-niger, nitidus; palpis, maxillis, antennis et pedibus piceo-rufis; thorace quadrato,

to be chiefly tropical. The deeply sulcated frontal fovea curving to the margin of the eyes is a well marked character. The genus is allied to *Bradycellus*, etc.

*Anchomenus subovatus*, Putz. l. c. p. 6.

North Nipon.

*Perigona japonica.*

*Trechichus japonicus*, Bates, l. c. p. 281.

M. Putzeys, having recently expounded the almost forgotten genus *Perigona* of Castlenau, it has become clear that the species with a central tooth to the mentum, hitherto referred to *Trechichus*, are more properly *Perigonæ*.

*Pœcilus fortipes*, Chaud. See Putz. l. c. p. 6.

*Pœcilus prolixus*, Putz. (*Koyi* olim) l. c. p. 10.

Yesso.

*Pœcilus planicollis* (Motsch.), Bates, Tr. E. S. 1873, p. 284.

Baron Chaudoir, in his recent "Monographie du Genre Pœcilus," places this species as synonymous with *P. versicolor* (Sturm).

*Amara chalcites*, Zimm.

Mr. Lewis has lately seen, in the collection of M. Putzeys, Japanese specimens of this species, no doubt authentically named, which he found at once to be quite distinct from the *Amara* taken by him and recorded in my former paper as *A. chalcites*. All his specimens are referable to the following:—

*Amara Zimmermanni*, Putz. Ann. Soc. Ent. Belg. t. xviii. p. 7.
*chalcites*, Bates (nec Zimm.)

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postice paululum sinuato-angustato, basi sparsissime punctato, utrinque medio foveâ elongatâ; elytris striis 9 profundis impunctatis, striolâ basali brevi inter strias 1 et 2, apice obtuse sinuato-rotundatis. Long. 3½ lin. Rangoon.

*Oxycentrus Borneensis* ♂. Oblongus, niger, nitidus, antennis, palpis pedibusque picco-rufis; thorace minus elongato, transverso, postice paulo magis angustato, angulis obtusis, basi utrinque dense subrugulose punctulato, foveâ latâ vix impressâ; elytris striis vel sulcis 9 impunctatis, apice oblique sinuatis, subacutis, striolâ basali inter strias 1 et 2. Long. 3¾ lin. Borneo.

*Amara striatella*, Putz. l. c. p. 8.
Nagasaki, Kisto.

*Pogonus japonicus*, Putz. l. c. p. 8.
S. Nipon.

*Pogonus flavipes* (Motsch.), Putz. l. c. p. 8.

*Notaphus Batesi*, Putz. l. c. p. 8.
*niloticus*, Bates, l. c. p. 301.

M. Putzeys considers the Japanese insect sufficiently distinct from *N. niloticus* to receive a new name.

*Mochtherus luctuosus*, Putz. l. c. p. 9.
S. Nipon.

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PLATE I.

1. *Eustra plagiata.*
2. *Dischissus mirandus.*
3. *Oxycentrus Argutoroïdes.*
4. *Endynomena Lewisii.*
5. *Paraphæa signifera.*
6. *Taicona aurata.*
7. *Lebidia bioculata.*
8. *Amphimenes piccolus.*

## II. *On a new and remarkable species of* Attacus.

By W. H. Miskin.

[Read 5th January, 1876.]

The following description of what, I believe, to be a unique and extraordinary form of this genus of moths will probably be read with interest.

*Attacus Hercules*, n. sp.

Ferruginous.

*Male.*—Antennæ tawny, nearly a fourth as long again as thorax, exceedingly deeply and perfectly bipectinate, the branches in pairs of equal length. Thorax and abdomen same colour as wings, the latter with white band at base.

*Fore wing.*—Costa considerably convex apically, falcate, nearly square at apical angle; outer margin concave; posterior angle rounded; semi-hyaline narrow discal band, bordered inwardly with black, nearly straight, but arched when touching the costa; vitreous triangular discal spot attenuated, base rounded, point not touching the band, lined round narrowly with white, and again surrounded by a narrow band of black, which, on the side parallel with the base, is broad and crescent-shaped; some distance beyond this, towards the base of the wing, is a corresponding arch of white; a narrow basal transverse band of white runs angularly towards the base from median vein to abdominal margin; a rosy patch in apical angle.

*Hind wing.*—Long tail; abdominal margin perfectly straight, from a little below extremity of abdomen to about three-fourths the length of tail, where it slightly dilates, then abruptly diverging at an obtuse angle, until it meets extremity of outer margin (which is somewhat curved from a little above the elbow), forms a long, acutely-pointed angle; main branch of median nervure not continued down the tail (as in *Tropæa*), but terminating on outer margin a little before the tail; there are consequently but three nervures contained therein: the submedian reaching a little below the elbow, the second median branch only reaching to the extreme point, the third intermediate; basal part of abdominal margin excavated;

apical angle not rounded; discal band as in fore wing, but quite straight to within short distance of abdominal margin, when it curves and touches the margin a little way down the tail; vitreous spot as in fore wing, but smaller, less attenuated, and less rounded at base; short white transverse band as in fore wings, about equidistant between spot and base of wing.

*Underside* much lighter in colour and hoary; all the dark markings obsolete or indistinct; a white patch at base of hind wings.

Margins of both wings entire.

Length of body 1′ 7″; expanse of wings 7′ 4″; length of abdominal margin to point of tail 4′ 7″; of tail 2′ 3″; breadth of tail 4″.

*Female.* — Antennæ, arising from strongly-developed sockets, lightly bipectinate. Thorax and abdomen same colour as wings, broad white band at base of latter, and a narrow one near apex of same.

*Fore wing* rounded towards apex, outer margin slightly concave, posterior angles rounded; markings as in ♂, except that the discal band is widely bordered outwardly by a band of rosy grey, radiated on its outer edge; dark rosy patch at extremity of apical angle, bordered inwardly with white; a short line of rosy pink near patch; vitreous spot much larger in proportion than in ♂, nearly touching discal band; otherwise same as in ♂.

*Hind wing* with short very broad tail, which is nearly square, but rather broader than long; abdominal margin nearly straight to inner angle of tail, where it is rounded; outer angle of tail rather acute; from a little above commencement of tail on outer side is a white submarginal line continued along bottom of tail (where it is crenated) to the inner angle; rosy-grey discal band, not radiated; base of vitreous spot arched, otherwise same as in ♂, as also other markings. Discal area of both wings a shade darker than other parts.

*Underside* pale, the dark markings indistinct; the white submarginal line in tail as on upper side.

Length of body 2′ 1″; expanse of wings 9′; length of hind wing to inner angle of tail 3′ 7″; of tail, outer edge, 10″; breadth of tail 1′.

*Hab.*—Cape York, Queensland.

Both specimens are contained in the Collection of the Queensland Museum, and are remarkably fine examples. They are, as far as I can learn, the only individuals that

have ever been collected, and were captured at Cape York and presented to the Museum; the ♂ by the late C. D'Oyley Aplin, Esq., and the ♀ by F. Jardine, Esq.

The novel feature in *A. Hercules* is, of course, the tailed hind wings. In every other respect (including the neuration of the wings) it agrees with the characters of the genus, as given by Walker in the B. M. Catalogues. Whether this peculiarity should be considered of sufficient importance to justify the creation of a new genus for this moth is doubtful. But for the additions to the wings, our insect bears a striking resemblance to *A. Atlas*.

## III. *On various new genera and species of* Coleoptera.

By Chas. O. Waterhouse.

[Read 5th January, 1876.]

In the following paper I have described a few of the numerous new species of *Coleoptera* which have come under my notice. I have also noted some synonyms which happened to come before me whilst determining the position of the new species.

### List of Species.

GEODEPHAGA.

Carabidæ.

Callida terminata, C. W.

NECROPHAGA.

Silphidæ.

Nodynus (gen. nov.) nitidus, C. W.

Cucujidæ.

Diagrypnodes (gen. nov.) Wakefieldi, C. W.

Byrrhidæ.

Nosodendron testudinum, C. W.

Psephenidæ.

Tychepsephus (gen. nov.) felix, C. W.

Matæopsephus (gen. nov.) nitidipennis, C. W.

Parnidæ.

Potamophilus perplexus, C. W.

Parygrus Erichsoni, C. W.
„ Hardwicki, M'Leay.
„ indicus, C. W.
„ talpoides, C. W.
„ elegans, C W.

Sostea sodalis, C. W.
„ picea, C. W.
„ hirtifera, C. W.

LAMELLICORNIA.

Scarabæidæ.

Coptorhina Barratti, C. W.

Rutelidæ.

Pelidnota rufipennis, C. W.
„ cylindrica, C. W.

RHYNCHOPHORA.

Anthribidæ.

Mecocerus sulphureus, C. W.

## GEODEPHAGA.

### Carabidæ.

*Callida terminata*, sp. nov.

Æneo-viridis, nitida; corpore subtus obscure viridiæneo; antennis tarsisque ferrugineis; elytrorum apice purpureo. Capite lato, fronte obsolete maculâ ferrugineâ notatâ. Thorace capite paululo latiori, longitudine haud latiori, sub-cordato, lateribus antice rotundatis, angulis posticis fere rectis, dorso transversim subtilissime strigu-

loso, lateribus reflexis. Elytris thorace fere duplo latioribus, depressiusculis, sat fortiter striatis, striis obsolete crebre punctulatis, interstitiis leviter convexis; apicibus truncatis, leviter emarginatis, emarginationis angulo externo distincto.

Long. $4\frac{3}{4}$ lin.; lat. 2 lin.

In general form this species somewhat resembles *C. splendidula*, but is relatively much broader. The eyes are larger, and approach nearer to the neck. The thorax is broader, and has the sides in front and the anterior angles more rounded; the posterior angles are slightly more divergent. The elytra are relatively broader and slightly more parallel, and the external angle of the apical truncature is distinct, almost acute. The depth of the striæ and the convexity of the interstices are as in *C. splendidula*.

*Hab.*—Borneo, Sarawak. Brit. Mus.

## NECROPHAGA.

### Silphidæ.

### Nodynus, gen. nov.

General form elongate, quadrangular, depressed. Mentum trapezoidal; labial palpi short; maxillary palpi well developed, the apical joint a little longer than the previous joint, subcylindrical. Antennæ 11-jointed and formed as in *Necrophilus*. Thorax ample, slightly narrowed in front, lateral margins thickened and reflexed. Elytra quadrangular, truncate at the apex, leaving the two apical segments of the abdomen uncovered. Legs rather slender; tarsi rather short, the basal joint extremely short, scarcely visible; 2nd, 3rd and 4th joints nearly equal, a little elongate, with strong bristles below, claw-joint a little longer than the previous joints taken together.

I think that there can be no doubt that this genus should be placed between *Necrophilus* and *Apatetica*; it has the antennæ of the former combined with the general form of *Apatetica*. It differs from this last, besides the antennæ, in having the thorax more ample, the elytra a little longer, and the proportions of the tarsal joints are different, and the 4th joint is not bilobed.

*Nodynus nitidus*, sp. nov.

Oblongus, leviter convexus, niger, nitidissimus; elytris purpureo-nigris; antennis articulo apicali albido. Capite crebre fortiter punctato, clypeo subtilius haud crebre punctulato. Thorace longitudine $\frac{1}{3}$ latiori, leviter convexo dorsim lævi, antice leviter angustato, angulis anticis rotundatis, angulis posticis obtusiusculis, basi utrinque leviter sinuato, lateribus reflexis arcuatis, supra parce punctulatis. Scutello semicirculari lævi. Elytris thorace vix angustioribus, at $\frac{1}{3}$ longioribus, lævibus, lateribus fere parallelis (lævissime arcuatis), singulo elytro septemstriatis, striis vix impressis, subtilissime punctulatis ad apicem arcuatim truncato. Abdomine subtus obsolete crebre punctulato, supra fere lævi.

Long. 4 lin.; lat. 2 lin.

*Hab.*—E. Indies. Brit. Mus.

## Cucujidæ.

### Diagrypnodes, gen. nov.

Elongate, narrow, flat. Head ovate; mandibles very stout, prominent: antennæ filiform, reaching to the apex of the elytra, the basal joint long, club-shaped, very slender at its base; the second joint very small, scarcely longer than broad, narrowed at the base; the 3rd the same form, but $\frac{1}{3}$ longer; the 4th to 10th nearly equal, somewhat slender; the 11th a little longer than the 10th, very slender and fusiform. Eyes very small, not prominent. Thorax scarcely as broad as the head and about the same length, narrowed somewhat suddenly behind the middle. Elytra abbreviated, narrow, about the length of the head and thorax together. Abdomen long, flat, with five segments visible above, rounded at the apex. Femora stout, the basal joint to the four anterior tarsi slightly elongate; the 2nd and 3rd subequal and a little shorter than the 1st; the 4th joint shorter, small; 5th joint as long as the four previous joints taken together; posterior tarsi with only four joints, of which the 1st is somewhat elongate, the 2nd rather shorter, the 3rd very short.

This genus should be placed next to *Ino*.

*Diagrypnodes Wakefieldi*, sp. nov.

Elongatus, parallelus, depressus, nitidus, rufo-testaceus. Capite depresso, ovato, postice angustato, subtiliter dis-

crete punctulato; mandibulis nigro-piceis, crassis; oculis parvis, nigris; antennis longis, articulo primo elongato, clavato. Thorace capite paululo angustiori, depresso, post medium paulo constricto, dein ad basin angustato, dorso utrinque parce punctulato. Scutello concavo. Elytris basi capite vix angustioribus, postice latioribus, obsolete subtilissime punctulatis, nigris, basi testaceo, singulo elytro ad apicem oblique arcuatim truncato. Abdomine nigro-piceo, lateribus subtilissime punctulato, segmentis primo secundoque ad apicem testaceis.

Long. $3\frac{1}{2}$ lin.; lat. $\frac{3}{4}$ lin.

*Hab.*—New Zealand. Brit. Mus.

A single specimen of this beautiful species was sent by Mr. C. M. Wakefield in an interesting series of small *Coleoptera*, among which were many examples of the most elegant little Longicorn, *Zorion guttigerum*, Westw. (*Zorion Batesi*, Sharp, Ent. Mo. Mag. 1875).

*Note.*—From description, *Euryplatus lateralis*, Motsch., Et. Ent. 1859, is certainly *Prognatha decisa* of Walker, Ann. and Mag. N. H. 1858 (*Staphylinidæ*). Motschulsky is perfectly correct in placing the genus in the *Cucujidæ*. *Prognotha tenuis*, Wkr. (l. c. 1859, p. 52), is *Isomalus indicus*, Kz., Wiegm. Arch. 1859. *Cucujus incommodus*, Wkr., belongs either to *Psammœcus* or a closely allied genus.

## Byrrhidæ.

### *Nosodendron testudinum*, sp. nov.

Statura omnino *N. fasciculare*, at minor; nigrum, vix nitidum, haud pubescens. Capite vix perspicue crebre punctulatum; antennis testaceis. Thorace vix perspicue punctato. Elytris distincte striatis, interstitiis a striis transversis interruptis, singulâ quadrâ hoc modo factâ medio puncto sat magno notatâ.

Long. $1\frac{3}{4}$ lin.; lat. 1 lin.

The very fine and close punctuation of the head, thorax and elytra is only visible with a very strong magnifying power. The striæ of the elytra are slightly zig-zag, and the transverse striæ of the interstices, occurring at regular intervals, divide the surface into squares, or, on account of the zig-zag longitudinal striæ, into hexagons; each square or hexagon is marked in the middle with a somewhat strong puncture; all the striæ, when examined with a microscope, are seen to be composed of minute punc-

tures. The prosternum is elongate, triangular, less narrow than in *N. fasciculare*. The metasternum is only visibly punctured in the middle when examined with a powerful magnifier, but the sides are very strongly punctured, as are also the legs (especially the femora). The abdomen is not visibly punctured.

The mentum has two longitudinal deep grooves, which make it appear divided into three parts; this gives it a curious appearance, but I think it is not of generic importance.

*Hab.*—Pará (H. H. Smith). Brit. Mus.

### Byrrhidæ *v.* Cryptocephalidæ.

*Inclica solida*, Walker.

The type of this insect has just come under my notice. It does not belong to the *Byrrhidæ* as placed by Walker, but is one of the *Cryptocephalidæ*, close to (if not congeneric with) *Monachus*. Motschulsky (Bull. Mosc. 1866, i. p. 412) describes five species of *Monachus* from Ceylon; and, judging from his descriptions, I think it probable that all his so-called species are only colour varieties of one, and that *Inclica solida*, W., is only another variety.

It may be convenient to retain the name *Inclica* as distinct from the American *Monachus*, as a close examination is very likely to bring to light generic differences in insects from opposite quarters of the globe.

*Inclica solida*, W., 1859 = ? *Monachus flaveolus*, *basalis*, *suturalis*, *nigrolimbatus*, and *acutangulus*, Mots. 1866.

### Psephenidæ.

*Tychepsephus*, gen. nov.

General form that of *Psephenus*, but convex. Head formed nearly as in that genus, but less free, owing to the prominent angles of the thorax; the mouth is almost entirely hidden by the prosternum being produced anteriorly; clypeus very narrow, and rounded in front. Thorax transverse, narrowed in front, front margin slightly lobed in the middle, the anterior angles somewhat prominent, base broadly bisinuate. Scutellum cordiform. Elytra ample, a little longer than broad, convex, a little broader than the thorax at the base, but much wider posteriorly, and then gradually narrowed to the apex. Prosternum very slightly produced posteriorly

over a slight triangular impression in the front of the mesosternum. Abdomen composed of five segments, the apical one not emarginate, the sutures straight. The legs are very slender, the four anterior coxæ are approximate; the tarsi are very long and slender; the 1st joint is very long, the 2nd, 3rd and 4th become shorter, the 4th being one-half the length of the 1st; the 5th is scarcely longer than the 1st. Body above covered with fine scale-like pubescence; underside clothed with silky pubescence.

The antennæ are unfortunately wanting in the Museum specimen, but I am enabled, by the kindness of Mr. Janson, to give the following from a specimen in his collection. Antennæ reaching to the back of the thorax; basal joint elongate, reaching to the middle of the eye, the 2nd joint very short, the 3rd nearly as long as the 1st; the following joints scarcely shorter than the 3rd, subequal, nearly cylindrical, but a little narrowed at their bases.

*Tychepsephus felix*, sp. nov.

Ovatus, convexus, nitidus, obscure piceus, æneseens, subtiliter brevissime griseo-pubescens. Capite flavescens, sat lato, inter antennas angustato, oculis prominulis, antennis basi testaceis. Thorace vix convexiusculo, creberrime subtiliter punctulato, longitudine duplo latiori, antice subito angustato; margine antico medio paulo lobato, utrinque sinuato; angulis anticis prominulis acutiusculis; lateribus post medium leviter rotundatis, angulis posticis fere rectis; marginibus angustissime flavis. Scutello flavescenti, apice acuto. Elytris basi thorace paululo latioribus, postice ampliatis, ad apicem arcuatim angustatis, convexis, creberrime subtiliter punctatis; dorso depressiusculo; humeris obtusis, cum marginibus angustissime flavescentibus. Corpore subtus dense griseo-pubescenti; pedibus piceo-flavis.

Long. 2¾ lin.; lat. 2 lin.

*Hab.*—Chili. Brit. Mus.

The thorax is at the base nearly straight next to the scutellum, but is broadly sinuate on each side, so that at first sight it appears only bisinuate. Epipleural fold of the elytra is broad at the base, gradually narrowing to the apex, channelled posteriorly.

MATÆOPSEPHUS, gen. nov.

General form that of *Psephenus:* depressed, short, broad. Mouth inferior; mentum trapeziform, small, narrowed in

front; maxillary palpi long, the apical joint ovoid; labial palpi very small, the apical joint small, subulate. Head free, broad; clypeus transverse, horizontal, deflexed and transversely channelled in front; eyes prominent; antennæ 11-jointed, the 1st joint elongate, slightly bent; the 2nd globular; the 3rd longer than broad; the 4th to 10th scarcely longer than broad, narrowed at their bases. Thorax transverse, narrowed in front, bisinuate at the base. Elytra oblong, bluntly rounded at the apex. Legs slender, the last joint as long as the four preceding taken together. Prosternum truncate in front, slightly produced behind, and received into a longitudinal impression in the mesosternum. Abdomen composed of six segments, of which the 4th is very short, the 5th emarginate, the 6th very small.

From this description it will be seen that the present insect only differs from *Psephenus* in the form of the clypeus, which is well developed, distinctly separated from the head. I at first took this part for the labrum, but I believe I am correct in calling it the clypeus; the labrum is very small and transverse, and is hidden by the clypeus. The antennæ appear more loose in the joints than in *Psephenus;* they are not in good condition in the specimen described.

In this, as in *Psephenus,* there are only five well-developed segments to the abdomen; it is possible, however, that the abdomen may have seven segments in this genus also, but I cannot trace them.

*Matæopsephus nitidipennis,* sp. nov.

Brevis, latus, depressus, nigro-piceus; capite thoraceque velutinis; corpore subtus piceo-testaceo velutino; femoribus subtus piceo-testaceis.

Long. $2\frac{1}{4}$ lin.; lat. $1\frac{1}{4}$ lin.

This species differs chiefly from *Psephenus Lecontei* in being smaller, relatively shorter, the thorax less narrowed in front; the elytra relatively shorter and more rounded at the apex, and not pubescent. Head free, rather broad, eyes prominent, clypeus pitchy. Thorax nearly twice as broad as long, gently convex, velvety, slightly lobed over the head, narrowed in front (the sides gently arcuate), broadest at the posterior angles, which are blunted; the base is broadly bisinuate; towards the front margin there are indications of two dull red spots. Scutellum small,

cordiform. Elytra depressed, not pubescent, extremely finely and closely punctured, with larger (but still very fine) punctures scattered over the surface; scarcely as broad as the thorax at the extreme base, but rapidly becoming wider posteriorly, broadly rounded at the apex. Underside velvety, piceous, varied with pitchy-testaceous. Femora and coxæ shining testaceous below. Tibiæ very slender. Tarsi not very long, slender.

*Hab.*—China (J. C. Bowring, Esq.). Brit. Mus.

## Parnidæ.

*Potamophilus perplexus*, sp. nov.

Elongatus, nigro-piceus, dense subtiliter griseo-pubescens. Capite sat magno; antennis articulis duobus basalibus rufescentibus. Thorace longitudine vix latiori, antice angustato, angulis anticis deflexis obtusiusculis supra impressis, lateribus levissime flexuosis, angulis posticis vix acutiusculis, basi trisinuato. Scutello parvo, cordato. Elytris thorace vix latioribus, ad apicem acuminatis, distincte punctato-striatis, interstitiis vix convexis; singulo elytro ad apicem intus oblique truncato, inde fit ut elytron in dente parvo terminet. Pedibus longis, femoribus subtus piceis.

Long. $2\frac{1}{4}$ lin.; lat. $\frac{9}{10}$ lin.

This species is evidently closely allied to *P. orientalis*, Coquerel, but (judging from the figure of the thorax, and the description) it differs in having the sides of the thorax much less flexuous, indeed they are nearly straight; the posterior angles (which are impressed above) are scarcely acute and the extreme point is blunt, and they are not directed backwards. The elytra are scarcely broader than the thorax at the base, whereas in *P. orientalis* they are said to be much broader.

*Hab.*—Java (J. C. Bowring, Esq.). Brit. Mus.

## Parygrus, Er.

General form that of *Parnus*. Thorax without any lateral groove. Antennæ eleven-jointed, with the second joint produced and reflexed anteriorly. Eyes hairy. Mesosternum not broad, triangularly notched in front to receive the prosternum.

This genus is established by Erichson for some undescribed South American *Parni* of narrow form, with strongly striated elytra. I very reluctantly here associate

with them some Asiatic species, which differ in having the elytra more or less delicately striated, and three of them being of a broad form.

*Parygrus Erichsoni*, sp. nov.

Elongatus, nigro-piceus, subnitidus, parce longe pubescens; fronte impressâ; thorace longitudine paululo latiori antice paulo angustato, crebre subtiliter punctulato (punctis majoribus sat crebre interspersis), brevissime haud dense pubescenti, angulis posticis acutis. Scutello cordiformi. Elytris basi thorace vix latioribus et triplo longioribus, postice paulo ampliatis, ad apicem arcuatim attenuatis, convexis, parce longius pubescentibus, fortiter punctato-striatis, interstitiis sat angustis nitidis, convexiusculis. Antennis flavescentibus, basi piceo, articulo primo obconico, secundo majore fortiter auriculato. Tibiis tarsisque piceis.

Long. 2¾ lin.; lat. 1 lin.

The general form is that of *Parnus prolifericornis*, but it is much more elongate and narrower, and it is not densely clothed with pubescence. The head is a little broader, the forehead convex with a shallow impression on the vertex; the pubescence on the eyes is longer than in that species. The thorax is rather narrower, a little more convex, the sides are gently arcuate, the anterior angles are acute, the posterior angles acute and very slightly divaricate and are impressed above. The striæ of the elytra are deep and the punctures large; the interstices are somewhat narrow and gently convex, with scarcely a trace of punctuation. The 2nd joint of the antennæ is large, produced and recurved anteriorly. Of the branches emitted by the 3rd to 10th joints that of the 4th is the longest; those of the following joints gradually become shorter, the 11th joint is conical.

*Hab.*—Columbia. Brit. Mus.

*Parygrus Hardwicki*, MacLeay.

This species is described by MacLeay as a *Dryops*, but its structure is quite different from that genus.

*Hab.*—Java. Type in Brit. Mus.

*Parygrus indicus*, sp. nov.

Elongatus, convexus, niger, nitidulus, grisco-pubescens. Capite convexo; antennis piceis. Thorace longitudine

paulo latiori, convexo, crebre punctato, antice paulo angustato, angulos posticos acutiusculos versus vix angustato, basi trisinuato. Scutello lato, cordato, piceo. Elytris thorace vix latioribus at triplo longioribus parallelis, ad apicem arcuatim angustatis, superne vix perspicue striato-punctatis. Tibiis tarsisque piceis.

Long. 3 lin.; lat. $1\frac{1}{6}$ lin.

*Hab.*—India (J. C. Bowring, Esq.). Brit. Mus.

This species is extremely close to *P. Hardwicki*. It differs in being rather more elongate, in having the thorax slightly narrowed posteriorly, so that the greatest breadth is just before the angles, whereas in *P. Hardwicki* the thorax gradually becomes broader to the posterior angles. The elytra are relatively longer, and the striæ are very obsolete; in *P. Hardwicki* the striæ are quite distinct.

*Parygrus talpoides*, sp. nov.

Oblongus, convexus, niger, griseo-pubescens. Thorace longitudine $\frac{1}{4}$ latiori, antice posticeque angustato. Elytris thorace $2\frac{3}{4}$ longioribus, distincte striato-punctatis.

Long. $3\frac{1}{2}$ lin.; lat. $1\frac{1}{2}$ lin.

This species differs from the last in being relatively broader, in having the thorax more decidedly narrowed at the posterior angles, the elytra distinctly striate-punctate, and more rounded at the apex. From *P. Hardwicki* it differs in being broader and in having the thorax narrowed posteriorly.

*Hab.*—Philippine Islands. Brit. Mus.

*Parygrus elegans*, sp. nov.

Elongatus, convexus, dense flavo-griseo pubescens. Thorace longitudine $\frac{1}{4}$ latiori, leviter convexo, dense subtiliter sericeo-pubescenti, subtiliter punctulato; angulis anticis acutis, porrectis; lateribus leviter arcuatis; angulis posticis fere rectis, basi fortiter trisinuato. Scutello cordato, longitudine vix latiori. Elytris thorace $\frac{1}{5}$ latioribus, postice ampliatis, ad apicem rotundatis subtiliter striato-punctatis. Tibiis gracilibus piceis, posticis ad apicem laminâ parvâ externe instructis; tarsis gracilibus.

Long. $2\frac{1}{2}$ lin.; lat. 1 lin.

This species is peculiar for its narrow thorax; the elytra are distinctly enlarged posteriorly, and are rounded at the apex. The antennæ have the branches of the joints very little diminishing in length towards the apex. The thorax is a little more narrowed in front than behind; the

sides are gently arcuate; the anterior angles acute and directed forward. The elytra are distinctly broader than the thorax, densely clothed with yellowish silky pubescence; the striæ are very delicate.

*Hab.*—Celebes (J. C. Bowring, Esq.). Brit. Mus.

A specimen labelled Bengal only differs in being a trifle larger, and in being somewhat paler in colour.

*Sostea sodalis*, sp. nov.

Ovata, nigra, nitida, longe pubescens; thorace haud crebre distincte punctulato; scutello parvo, triangulari; elytris fortiter striato-punctatis, punctis dorsalibus minus impressis; pedibus piceis.

Long. $2\frac{1}{4}$ lin.; lat. $1\frac{1}{3}$ lin.

The thorax is twice as broad as long, gently narrowed in front, the sides very slightly arcuate; the punctures are large, not very close together, not so close as in *S. Westwoodii* (which the species most nearly resembles), but more impressed. The elytra are broader than in *S. Westwoodii*, and less attenuated posteriorly, very convex; the punctures forming the striæ are not large, and are only lightly impressed near the suture; they become larger and deeper towards the sides, but not so much so as in *S. Westwoodii;* the interstices are broad, and not convex even at the sides.

*Hab.*—Java (J. C. Bowring, Esq.). Brit. Mus.

*Sostea picea*, sp. nov.

Oblongo-ovata, picea, nitida, longe setosa; thorace discrete distincte punctato; scutello subcordato; elytris fortiter striato-punctatis, punctis dorsalibus minus impressis.

Long. 2 lin.; lat. 1 lin.

The punctures on the thorax are distinct but not very strong nor close together, except near the sides; there is a very shallow impression near each posterior angle. The elytra are very nearly three times as long as the thorax, parallel for two-thirds their length and then gradually attenuated to the apex; the punctures forming the rows are somewhat delicate next the suture; they become deep and larger towards the sides but not confluent, and the interstices, although narrow towards the sides, are still broader than the punctures; at the apex the elytra are deeply striated.

*Hab.*—Sylhet. Brit. Mus.

This species most nearly resembles *S. æneipennis*, but is rather more elongate; the elytra are much less gibbose near the scutellum and the punctures forming the lines are rather less strong at the sides.

*Sostea hirtifera*, sp. nov.

Oblongo-ovata, subnitida, nigra, longe setosa; thorace convexo, antice lobato, fortiter crebre punctato, lateribus arcuatis, dorso longitudinaliter impresso; elytris thorace paulo latioribus et 2½ longioribus, ad apicem angustatis, fortiter punctato-striatis, striis ad apicem impressis, interstitiis angustissimis et interruptis; singulo elytro juxta scutellum nodo notato.

Long. 2 lin.; lat. 1 lin.

This species differs considerably from all the other described species of the genus in the form of the thorax, &c.; it most nearly approaches *S. elmoides*. The thorax is transverse, very convex, slightly narrowed behind, rather more so in front, slightly lobed over the head, with a distinct longitudinal impression on the anterior part of the disk, and on each side an impression extending from the dorsal impression to each posterior angle. The sides are very slightly rounded; the anterior angles are acute and very porrect. The elytra are very slightly narrowed below the shoulders and then again become more ample, not much attenuated towards the apex; the punctures of the striæ are deep and large and close together; hence it happens that the interstices are very narrow and somewhat interrupted, which gives them an irregular appearance.

*Hab.*—Borneo. Brit. Mus.

## LAMELLICORNIA.

### Scarabæidæ.

*Coptorhina Barratti*, sp. nov.

Nigra, nitidissima, ovata, convexa. Clypeus utrinque in cornu longissimo acuto productus; cornubus porrectis, apices versus paulo approximatis, cum oculorum cantho punctatis. Caput fere læve medio tuberculo parvo obsolete instructum. Thorax magnus, convexus, antice vix angustatus, longitudine ⅔ latior, margine antico angulisque anticis crebre subtiliter punctulatis, his leviter sinuatis; margine postico medio lineâ brevi notato. Elytra thoracis latitudinem æquantia convexa, apicem versus arcuatim

angustata, latitudine $\frac{1}{3}$ breviora, distincte striata, striis tenuiter crenato-punctatis, interstitiis planis lævibus. Tibiæ anticæ extus fortiter tridentatæ.

Long. sine cornubus $5\frac{3}{4}$ lin.; lat. $4\frac{1}{3}$ lin.

This interesting species in general form most nearly approaches *Copt.* (*Epirhinus*) *armatus*, Bohem., but is much more convex; the horns of the clypeus are much less reflexed towards the apex.

*Hab.*—S. Africa (Transvaal). Brit. Mus.

I have named the species after the collector to whom we are indebted for the specimens.

## Rutelidæ.

*Pelidnota rufipennis*, sp. nov.

Ovata, convexa, nitida, nigro-cærulea; elytris rubris; corpore subtus hic et illic tarsisque æneis. Capite parce punctulato; clypeo antice angustato, crebre punctato, apice bidentato. Thorace longitudine $\frac{2}{5}$ latiori, convexo, ante medium subito angustato, dorso discrete subtilissime punctulato, angulos anticos versus distinctius punctato, utrinque impressione crebre punctato notato. Scutello obsolete punctulato. Elytris thorace paulo latioribus, medio ampliatis, fortiter striatis, striis lateralibus fortiter punctatis, interstitiis secundo tertioque irregulariter punctatis. Pygidio supra obscure violaceo-tincto, transversim crebre aciculato.

Long. 7 lin.; lat. 4 lin.

Allied to *P. nitescens*, Vigors, and nearly of the same form, more convex; thorax not narrowed posteriorly; lateral margins thickened, but not nearly so much as in that species, the impression on each side of the disk not very deep. Margin of the elytra thickened from the shoulder to near the middle; the three dorsal striæ are very deep and not punctured, abbreviated at the base, the 2nd stria turning at the apex and continued along the margin of the elytra to the shoulder, where it becomes shallower and punctured; the 4th and 5th striæ are deeply impressed in the middle and punctured; the 6th to 8th striæ are formed of deep punctures. The underside of the insect and the legs are deep blue, here and there æneous, as are also the tarsi.

*Hab.*—Pernambuco. Brit. Mus.

*Pelidnota cylindrica*, sp. nov.

Elongata, subcylindrica, convexa, nitida, viridi-ænea. Capite sat magno; fronte leviter convexâ, antice posticeque fortiter punctatâ; clypeo fortiter rugoso-punctato, margine reflexo. Antennis piceis. Thorace longitudine $\frac{1}{3}$ latiori, convexo, parce latera versus crebrius sat fortiter punctato, ante medium paulo angustato, angulis anticis acutiusculis, posticis sat obtusis, basi leviter bisinuato. Scutello parce punctato. Elytris thorace paulo latioribus et $2\frac{2}{3}$ longioribus, postice paulo ampliatis, fortiter subseriatim punctatis. Pygidio magno, convexo, subtiliter crebre punctulato. Pedibus parce punctulatis; tibiis cuprascentibus.

Long. 14 lin.; lat. 6 lin.

The thorax has some obsolete impressions near the sides, all the margins are thickened. In front it is somewhat strongly bisinuate, so that the anterior angles are somewhat prominent. The elytra have some indications of longitudinal impressed lines, and some very slight transverse wrinkles on the disk. The pygidium is very convex, rounded at the apex. The underside of the body is slightly pubescent, and thickly and strongly punctured, but the legs are very glossy; the anterior tibiæ are strongly tridentate on their outer edge.

*Hab.*—Guatemala. Brit. Mus.

This species is remarkable for its very elongate form, and for the large size of the head.

## RHYNCHOPHORA.

### Anthribidæ.

*Mecocerus sulphureus*, sp. nov.

Dense flavo-tomentosus, nigro-variegatus; pedibus nigris, flavo-annulatis.

Long. $16\frac{1}{2}$ lin.; lat. 5—$5\frac{1}{4}$ lin.

Head black, clothed above with yellow tomentum; a fine sutural line, and two longitudinal spots on the neck, black. Thorax depressed, as long as broad, rather more narrowed in front than behind; the sides gently rounded, entirely clothed with yellow tomentum, except the lateral margins and a slightly flexuous stripe on each side of the disk, which are velvet black. Elytra $\frac{1}{4}$ broader than the thorax, and $2\frac{1}{2}$ times longer, gently convex, clothed with yellow tomentum, irregularly marked with black velvety square spots, a larger square spot behind the middle of each

elytron being most constantly visible. The whole underside of the insect and the femora are clothed with yellow tomentum. The tibiæ and tarsi are black, except the extreme base of the tibiæ and a ring in the middle, and the base of each tarsal joint, which are yellow. The antennæ are black, except the 8th joint, which is yellow.

*Mas.*—Antennæ reaching to the apex of the elytra; anterior legs very long (? minor development).

*Fem.*—Antennæ not quite reaching to the back of the thorax.

*Hab.*—Andaman Islands, Cambodia. Brit. Mus.

We are indebted to Mr. R. Meldola for the specimens from the Andaman Islands.

## IV. *Contributions to an Insect Fauna of the Amazon Valley.* Coleoptera—Staphylinidæ. By D. Sharp, M.B.

[Read 2nd February, 1876.]

There is probably no part of the world outside of the temperate zones of whose insect fauna we know so much as we do of that of the valley of the Amazon. During a long residence in this interesting region Mr. Bates formed rich collections of its *Insecta*, and since his return to Europe has published numerous important memoirs descriptive of these stores.

Mr. Bates naturally selected for study those groups which are best known, and about which therefore most interest is felt by entomologists; and some few years ago he made over to me the whole of the specimens in his possession of Amazonian *Staphylinidæ*, with the hope that I should be able to examine and describe them. While I was engaged in this task, Dr. J. W. H. Trail, of Aberdeen, made a journey to the Amazon valley in the interests of natural history, and on his return handed over to me, in the most disinterested manner, the *Staphylinidæ* (and some other *Coleoptera*) collected by him, and, as the result, I found myself in possession of an important supplement to Mr. Bates' collection. I have also received through Mr. Janson a few species of the family collected at Pará by Mr. H. H. Smith three or four years ago, and one or two interesting species from the upper portion of the valley, collected by Mr. Hauxwell, have reached me.

I am thus enabled to enumerate a considerable number of species of the family as inhabiting the valley of the Amazon; a large proportion of these species are small, obscure and unattractive to the general collector, but perhaps on this account their importance just now to the genuine student of nature is all the greater; for there is prevalent a generally entertained, but I believe quite erroneous, opinion as to the existence of minute and obscure species of insects in the tropics. It appears to be generally supposed that small and unattractive species of insects which we all know to be so numerous in temperate

regions, are comparatively less frequent in the tropics and are there replaced by the brilliant and magnificent forms which at present represent the insects of the tropics in our collections. I am myself, however, of opinion that obscure and minute species of insects are quite as abundant in the tropics as they are in temperate regions, and that the real difference that exists between the tropical and cooler regions of the world in this respect is, that in the tropics these minute insects are accompanied by a large number of brilliant and massive forms, which disappear gradually as the cold regions are approached. The following quotation will show that the removal of such misconceptions is of importance. In Lyell's "Students' Elements of Geology," that very careful author, in alluding to the remains of numerous species of insects found in the limestone of the Lias, in Gloucestershire, says (p. 342):—"The size of the species is usually small, and such as taken alone would imply a temperate climate, but many of the associated organic remains of other classes must lead to a different conclusion."

If my estimate of the abundance of obscure forms in the tropics be correct, the discrepancy alluded to by Sir Charles Lyell, in the passage just quoted, between the evidence from insect and that from other classes, would be considerably reduced, if not entirely removed. I need not, however, insist on this point, for now that we have obtained a considerable knowledge of the more striking insect forms of the tropics, we are constantly having revealed to us glimpses of the enormous number of minute species which probably exist there; I may, however, indicate Mr. Wollaston's important work on the *Cossonidæ* recently published by the Society, as illustrative of the correctness of my estimate.

Turning now to the number of species from the Amazons, it will be seen that the number here enumerated is 487, of which 463 are described as new. The proportion of new species to those previously described is therefore about as 19·1. This very large proportion of new species suggests forcibly how nearly complete is our want of knowledge of the *Staphylinidæ* of tropical America; nevertheless a good number of Mexican species have been described by Fauvel and Solsky, and latterly several species from Peru have been made known by the latter of these savants; the most important contribution to a know-

ledge of the South American *Staphylinidæ* hitherto obtained, however, is the descriptions contained in Erichson's "Genera et Species Staphylinorum," of species collected by Moritz in Columbia, and by Beske and others in Brazil. From these and from some other sources, we have had altogether just about 600 species of South American *Staphylinidæ* previously described, and, as will be seen from this paper, I have been able to identify very few of these described species with my Amazonian material. There is from this fact reason to suppose that, as a rule, the individual species of *Staphylinidæ* have not a wide range in South America, and this opinion is confirmed by all the other facts I am acquainted with. It is an interesting point, however, that the group *Piestini* seems to contain a much larger proportion of widely-distributed species than does any other group of the family, the proportion of new to previously-described species being in it only as $3\frac{1}{2}$·1.

This number of 487 species of *Staphylinidæ* inhabiting the Amazon valley, though it may at first appear by no means inconsiderable, is yet, I feel convinced, only a small fraction of the species of the group to be found in this prolific region. Mr. Bates informs me he only collected the species of this family when more important and valuable insects of other families were not to be met with; while out of the seventy-seven species of *Staphylinidæ* brought back by Dr. Trail, no less than fifty-five proved to be new, and not previously found by Mr. Bates. Taking all I know about these insects into consideration, I am unable to estimate the number of species of *Staphylinidæ* at present existing in Amazonia at less than four or five thousand species.

This paper, therefore, lengthy as it is, is but a preliminary contribution to a knowledge of the Amazonian *Staphylinidæ*, and in executing my task I have had constantly to bear in mind that I am only accomplishing a very imperfect work. This has been a great discouragement to me, for recognizing, as I do most thoroughly, how difficult is the task of determining obscure and small species by means of descriptions, however well drawn up, I have been often in doubt as to whether my labour would not be wasted, or, at any rate, rewarded only by very inadequate benefits to the cause of science. The certain discrimination of species by means of descriptions has

proved as yet unattainable, and this must, in my opinion, continue to be the case until all or nearly all the actually existing species are known to us, and until descriptive terms are used with much more precision and definition than is at present the case. Hence it happens that a large part of the time of those occupied with descriptive entomology is spent in trying to ascertain the value of the names used by their predecessors; and it by no means unfrequently happens that the efforts of those predecessors have considerably increased instead of diminishing the work to be accomplished by their successors. The practical result of these difficulties is, that an increasing importance is attached to type specimens. This, in my opinion, is a perfectly natural and satisfactory result. Science teaches us to deal with facts as directly as possible, and the actual specimens described by an author afford a certainty as to the species he intended which can be attainable by no other method.

The permanent preservation of valuable and fragile specimens and the associating of them in an inalienable manner with the name given to them, is, however, no easy task. But, in order to accomplish it in the case of the fragile insects here described, I have devised a method of covering and hermetically sealing the type specimens, which will, I believe, accomplish their complete protection from all destroying agencies except fire and rude physical catastrophes. Nearly all the smaller species here described, as well as a considerable proportion of the larger species, I have preserved by this method; and, rendered bold by the valuable results it promises, I have ventured to describe even minute species where I had but a single example of it from which to draw up my description. I have taken some steps to test the efficacy of this mode of preservation, and hope soon to be able to publish a description of the method.

As regards the terms "South America" and "tropical America," constantly used in this paper, I should explain that I mean all the parts of the New World south of the United States of North America, including the West India Islands, but excluding Chili and Patagonia. The fauna of Chili is known to be very different from that of the countries on the eastern side of the Andes, and of the *Staphylinidæ* of Patagonia I know absolutely nothing.

The 487 species here enumerated are divided among

the ordinarily accepted sub-families of *Staphylinidæ* in the following manner:—

| | | |
|---|---|---|
| Aleocharini | 44 | species. |
| Tachyporini | 18 | „ |
| Quediini | 9 | „ |
| Staphylinini | 93 | „ |
| Xantholinini | 33 | „ |
| Pæderini | 126 | „ |
| Pinophilini | 66 | „ |
| Stenini | 28 | „ |
| Oxytelini | 27 | „ |
| Omalini | 1 | „ |
| Piestini | 31 | „ |
| Platyprosopus | 10 | „ |
| Turellus | 1 | „ |
| Total | 487 | species. |

It would be premature for me to attempt to draw any important generalizations as to the geographical distribution of the different groups, for our knowledge of tropical *Staphylinidæ* is yet far too meagre to justify this; but on comparing the number of species contained in each sub-family with the number of species representing the same sub-family in the European fauna, one or two contrasts are so striking that they may be mentioned; they are the great comparative predominance of *Pinophilini* and *Piestini* in the Amazons, and, on the other hand, the diminished number of species of *Aleocharini* and *Omalini*. This latter fact cannot, however, be accepted as more than a negative temporary conclusion; and all I think we can at present say as the result of a comparison of this sort is that the groups *Piestini* and *Pinophilini*, which are barely represented by two or three species in Europe, are richly represented in the Amazons. In this respect the fauna of the Amazons will, I believe, be found to be similar to that of the other warmer parts of the world.

As regards genera, I have referred the Amazonian insects here dealt with to eighty different genera, of which I have established twelve as new, but of this part of my work I am unable to speak with any feeling of satisfaction. My main object in commencing this work was to describe the *species* of Amazonian *Staphylinidæ*, and I have only concerned myself with genera, because questions of nomenclature compelled me so to do. When a man describes a new species, the best thing he can do for the assistance of others is to mention what previously described species it is most nearly allied to. The system at present in vogue permits him, however, to avoid doing this by

mentioning a genus to which he supposes it to belong; and thus it happens that when dealing with such an enormous mass of species as exist in the *Insecta*, the very greatest confusion arises. We are not only practically at extreme variance with our predecessors as to what constitutes a genus, but the very greatest discrepancies of opinion prevail among presently active students on this point. I should therefore have preferred in this paper never to have used the word genus at all, and not to have concerned myself with the question of genera, for I am quite convinced that when dealing with a limited geographical fauna the student is not in a position to decide as to questions of genera; and this, I hold, would still be the case, even if an agreement as to what constitutes a genus prevailed among naturalists. The system at present in vogue, however, has not allowed me to do this; and in accordance with the usual custom of naturalists I have had to constantly use the word genus, and to make use of the generic system as the basis of my dealing with species. I have therefore adopted the plan of making as few new generic names as possible. Some farther observations on this point will be found among the remarks prefixed to the descriptions of the species of *Sunius* in this paper.

In examining these insects for description I have paid a good deal of attention to the sexual characters, and have ascertained in a great number of species not only what are the secondary sexual characters of the males, but also what is the actual structure of the ædeagus. It has long been known that the secondary male characters afford a most valuable aid to the distinction of the species of insects of various orders, and it has also been ascertained in several groups of *Coleoptera* that the ædeagus itself exhibits very remarkable differences of structure even in the case of closely allied species. After making an examination of the ædeagus in a large number of the species here described, I am led to think that the investigation of the structure and variations of this organ in the *Coleoptera* (and no doubt in other insects), would lead to highly important biological conclusions. I am able to state that in one group of the *Staphylinidæ*, viz., the *Piestini*, the ædeagus is excessively small, and varies but little from species to species; while in other groups it becomes a large complex structure, varying greatly from species to species. This is the case in many *Pæderini*, *Aleocharini* and *Pinophilini*. The variations of this

structure in certain groups are, however, so great, that they must be examined in a very careful manner, from species to species, before any trustworthy generalizations can be established. Mr. Darwin, in his work on natural selection, has attempted to explain the meaning and importance of the extraordinary secondary sexual characters which are so striking in some species of insects; but I am strongly of opinion that an inquiry into the importance of secondary sexual characters must be preceded by a thorough investigation of the primary sexual characters, and after that is gained I think it probable we shall be better able to deal with the secondary characters. In the case of the vegetable kingdom, Mr. Darwin has himself shown, in a manner that has delighted all naturalists, how important and radical is the connection between the actual organs of reproduction and the accessory parts of the inflorescence; and I think it highly probable that a similar course of inquiry, if carried out with insects, would make us acquainted with a direct connection between the primary and accessory sexual peculiarities. The difficulties in making the observations and dissections necessary in the prosecution of such researches is, however, very great in the case of organisms so small in size, and so complicated in structure as are the great majority of the *Insecta*.

Besides the enumeration and description of species with which this paper is chiefly occupied, there will be found prefixed to each genus some slight observations on distribution, and on structural points, and a few critical remarks.

## List of Species of Amazonian Staphylinidæ.

### ALEOCHARINI.

#### Eudera.

Eudera cava, n. sp.

#### Falagria.

Falagria Paræ, n. sp.
„ varicornis, n. sp.
„ curtipennis, n. sp.

#### Placusa.

Placusa confinis, n. sp.

#### Epipeda.

Epipeda cava, n. sp.
„ rufa, n. sp.

#### Diestota.

Diestota sperata, n. sp.

#### Brachida.

Brachida Batesi, n. sp.
„ Reyi, n. sp.

#### Myrmigaster (n. gen.).

Myrmigaster singularis, n. sp.

#### Myrmedonia.

Myrmedonia scabripennis, n. sp.
„ pollens, n. sp.
„ Batesi, n. sp.
„ spinifer, n. sp.
„ fortunata, n. sp.
„ nitidula, n. sp.

ALEOCHARINI—*continued.*

CALODERA.

Calodera syntheta, n. sp.

HOMALOTA.

Homalota capta, n. sp.
„ tenax, n. sp.
„ brevis, n. sp.
„ gilva, n. sp.
„ Traili, n. sp.
„ culpa, n. sp.

TACHYUSA.

Tachyusa picticornis, n. sp.
„ extranea, n. sp.

OXYPODA.

Oxypoda aliena, n. sp.

ALEOCHARA.

Aleochara prisca, n. sp.
„ verecunda, n. sp.
„ auricoma, n. sp.
„ mundana, n. sp.

GYROPHÆNA.

Gyrophæna pumila, n. sp.
„ parvula, n. sp.
„ parca, n. sp.
„ lævis, n. sp.
„ juncta, n. sp.
„ convexa, n. sp.
„ sparsa, n. sp.
„ quassa, n. sp.
„ tridens, n. sp.
„ boops, n. sp.
„ debilis, n. sp.

DEINOPSIS.

Deinopsis Matthewsi, n. sp.
„ longicornis, n. sp.

TACHYPORINI.

COPROPORUS.

Coproporus rotundatus, n. sp.
„ similis, n. sp.
„ obesus, n. sp.
„ retrusus, n. sp.
„ curtus, n. sp.
„ politus, n. sp.
„ brevis, n. sp.
„ ignavus, n. sp.
„ inclusus, n. sp.
„ cognatus, n. sp.
„ conformis, n. sp.
„ rufescens, n. sp.
„ tinctus, n. sp.
„ distans, n. sp.
„ duplex, n. sp.
„ scutellatus, n. sp.

TACHYPORINI—*continued.*

CONURUS.

Conurus latus, n. sp.
„ setosus, n. sp.

QUEDIINI.

TANYGNATHUS.

Tanygnathus longicornis, n. sp.
„ nasutus, n. sp.
„ flavicollis, n. sp.

ACYLOPHORUS.

Acylophorus punctiventris, n. sp.
„ angusticeps, n. sp.
„ acuminatus, n. sp.
„ iridescens, n. sp.

QUEDIUS.

Quedius clypealis, n. sp.

CORDYLASPIS.

Staphylinus pilosus, Fab.

PLATYPROSOPUS.

Platyprosopus major, n. sp.
„ laticeps, n. sp.
„ parallelus, n. sp.
„ puncticeps, n. sp.
„ rectus, n. sp.
„ minor, n. sp.
„ rufescens, n. sp.
„ opacifrons, n. sp.
„ frontalis, n. sp.
„ similis, n. sp.

STAPHYLININI.

BRACHYDIRUS.

Brachydirus maculiceps, n. sp.
„ antennatus, n. sp.
„ styloceros, n. sp.
„ cribricollis, n. sp.
„ simplex, n. sp.
„ amazonicus, n. sp.
„ Batesi, n. sp.
„ longipes, n. sp.
„ æneiceps, n. sp.

PLOCIOPTERUS.

Plociopterus tricolor, n. sp.
„ fungi, n. sp.
„ nigripes, n. sp.
„ affinis, n. sp.
„ dimidiatus, n. sp.
„ lætus, n. sp.
„ ventralis, n. sp.
„ Traili, n. sp.
„ virgineus, n. sp.
„ mirandus, n. sp.

STAPHYLININI—*continued.*

XANTHOPYGUS.

Staphylinus sapphirinus, Er.
Xanthopygus Solskyi, n. sp.
„ cyanipennis, n. sp.
„ apicalis, n. sp.
„ violaceus, n. sp.
„ depressus, n. sp.
„ nigripes, n. sp.
Staphylinus xanthopygus, Nord.
Xanthopygus cognatus, n. sp.
Philonthus analis, Er.
Staphylinus bicolor, Lap.

PHILOTHALPUS.

Philothalpus luteipes, n. sp.
„ latus, n. sp.
„ incongruus, n. sp.

GASTRISUS (n. gen.).

Gastrisus obsoletus, n. sp.
„ lævigatus, n. sp.
„ punctatus, n. sp.

EUGASTUS (n. gen.).

Eugastus bicolor, n. sp.
„ mundus, n. sp.

ISANOPUS (n. gen.).

Isanopus tenuicornis, n. sp.

TRIGONOPSELAPHUS.

Trigonopselaphus opacipennis, n. sp.
„ mutator, n. sp.
„ violaceus, n. sp.
„ venustus, n. sp.

GLENUS.

Glenus Kraatzi, n. sp.
„ Batesi, n. sp.
„ amazonicus, n. sp.
„ vestitus, n. sp.

LEISTOTROPHUS.

Staphylinus versicolor, Grav.

STAPHYLINUS.

Staphylinus subcyaneus, n. sp.
„ parviceps, n. sp.
„ ochropygus, Nord.
„ gratiosus, n. sp.
„ gratus, n. sp.
„ amazonicus, n. sp.
„ antiquus, Nord.
„ priscus, n. sp.
„ vetustus, n. sp.

BELONUCHUS.

Staphylinus hæmorrhoidalis, Fab.
Philonthus xanthopterus, Nord.

STAPHYLININI—*continued.*

Belonuchus Batesi, n. sp.
„ grandiceps, n. sp.
„ decipiens, n. sp.
Staphylinus formosus, Grav.
Belonuchus clypeatus, n. sp.
„ holisoides, n. sp.
„ æqualis, n. sp.
„ impressifrons, n. sp.
„ armatus, n. sp.
„ setiger, n. sp.

PHILONTHUS.

Philonthus amazonicus, n. sp.
„ corallipennis, n. sp.
„ deletus, n. sp.
„ muticus, n. sp.
„ gracillimus, n. sp.
„ æneiceps, n. sp.
„ cognatus, n. sp.
„ Traili, n. sp.
„ capitalis, n. sp.
„ lustrator, n. sp.
„ æneicollis, n. sp.
„ palpalis, n. sp.
„ aberrans, n. sp.
„ conformis, n. sp.
„ propinquus, n. sp.
„ regillus, n. sp.
„ abactus, n. sp.
„ longipes, n. sp.
„ serraticornis, n. sp.

HOLISUS.

Holisus depressus, n. sp.
„ picipes, n. sp.
„ excavatus, n. sp.
„ umbra, n. sp.
„ discedens, n. sp.

## XANTHOLININI.

DIOCHUS.

Diochus longicornis, n. sp.
„ vicinus, n. sp.
„ tarsalis, n. sp.
„ flavicans, n. sp.

STERCULIA.

Sterculia amazonica, n. sp.
„ pauloensis, n. sp.
„ discolor, n. sp.
„ funebris, n. sp.
„ fimetaria, n. sp.
„ clavicornis, n. sp.
„ minor, n. sp.

AGRODES.

Agrodes conicicollis, n. sp.
„ longiceps, n. sp.

XANTHOLININI—*continued.*

TESBA (n. gen.).

Tesba gigas, n. sp.
„ laticornis, n. sp.

LINIDIUS (n. gen.).

Linidius recticollis, n. sp.
„ tenuipes, n. sp.
„ extremus, n. sp.

XANTHOLINUS.

Staphylinus rutilus, Perty.
Eulissus Mannerheimii, Lap.
Xantholinus bicolor, n. sp.
„ anticus, n. sp.
„ pygialis, n. sp.
„ temporalis, n. sp.
„ æneiceps, n. sp.
„ Batesi, n. sp.
„ amazonicus, n. sp.
„ attenuatus, Er.

LEPTACINUS.

Leptacinus nitidus, n. sp.

LITHOCHARODES (n. gen.).

Lithocharodes fuscipennis, n. sp.

METOPONCUS.

Leptacinus filarius, Er.
Metoponcus basiventris, n. sp.
„ holisoides, n. sp.

PÆDERINI.

OPHITES.

Ophites stilicoides, n. sp.

SCOPÆODES (n. gen.).

Scopæodes gracilis, n. sp.
„ fusciceps, n. sp.

CRYPTOBIUM.

Cryptobium gigas, n. sp.
„ plagipenne, n. sp.
„ opacum, n. sp.
„ opacifrons, n. sp.
„ longiceps, n. sp.
„ ruficorne, n. sp.
„ subfractum, n. sp.
„ longicorne, n. sp.
„ scutigerum, n. sp.
„ alternans, n. sp.
„ punctipenne, n. sp.
„ scrobiculatum, n. sp.
„ fuscipenne, n. sp.
„ angustum, n. sp.
„ cylindricum, n. sp.
„ laticolle, n. sp.

PÆDERINI—*continued.*

Cryptobium angustifrons, n. sp.
„ alienum, n. sp.
„ triste, n. sp.
„ Traili, n. sp.

SPHÆRINUM (n. gen.).

Sphærinum opacum, n. sp.
„ depressifrons, n. sp.
„ carinifrons, n. sp.
„ elongatum, n. sp.
„ carinicolle, n. sp.
„ pallidum, n. sp.

LATHROBIUM.

Lathrobium macrocephalum, n. sp.
„ opalescens, n. sp.
„ decisum, n. sp.
„ puncticeps, n. sp.
„ parallelum, n. sp.
„ mendax, n. sp.
„ certum, n. sp.
„ rufulum, n. sp.
„ proximum, n. sp.
„ amazonicum, n. sp.
„ tardum, n. sp.
„ tenuicorne, n. sp.
„ Batesi, n. sp.
„ minor, n. sp.
„ simplex, n. sp.
„ chloroticum, n. sp.
„ necatum, n. sp.
„ deletum, n. sp.
„ integrum, n. sp.
„ pictum, n. sp.
„ hilare, n. sp.
„ nanum, n. sp.
„ glabrum, n. sp.
„ politum, n. sp.
„ pumilum, n. sp.

DOLICAON.

Dolicaon distans, n. sp.

SCOPÆUS.

Scopæus tarsalis, n. sp.
„ ornatus, n. sp.
„ pauper, n. sp.
„ chloroticus, n. sp.
„ distans, n. sp.
„ laxus, n. sp.
„ lævis, n. sp.

LITHOCHARIS.

Lithocharis latro, n. sp.
„ simplex, n. sp.
„ condita, n. sp.
„ diffinis, n. sp.
„ comes, n. sp.
„ sobrina, n. sp.

PÆDERINI—*continued.*

Lithocharis crassula, n. sp.
„ vestita, n. sp.
„ integra, n. sp.
„ compressa, n. sp.
„ discedens, n. sp.
„ convexa, n. sp.
„ oculata, n. sp.
„ quadrata, n. sp.
„ egena, n. sp.
„ humilis, n. sp.
„ ardua, n. sp.
„ munda, n. sp.
„ polita, n. sp.
„ germana, n. sp.
„ pagana, n. sp.
„ picta, n. sp.

STILICUS.

Stilicus amazonicus, n. sp.
„ punctatus, n. sp.

MONISTA (n. gen.)

Monista certa, n. sp.
„ longula, n. sp.
„ divisa, n. sp.

ECHIASTER.

Echiaster boops, n. sp.
„ fumatus, n. sp.
„ signatus, n. sp.
„ carinatus, n. sp.
„ latifrons, n. sp.
„ mamillatus, n. sp.
„ muticus, n. sp.
„ tibialis, n. sp.
„ Batesi, n. sp.
„ scissus, n. sp.

LINDUS (n. gen.).

Lindus religans, n. sp.

PÆDERUS.

Pæderus solidus, n. sp.
„ tridens, n. sp.
„ lingualis, n. sp.
„ mutans, n. sp.
„ protensus, n. sp.
„ amazonicus, n. sp.
„ punctiger, n. sp.

SUNIUS.

Sunius amicus, n. sp.
„ vittatus, n. sp.
„ serpens, n. sp.
„ ventralis, n. sp.
„ strictus, n. sp.
„ marginatus, n. sp.
„ brevis, n. sp.
„ modestus, n. sp.

PÆDERINI—*continued.*

Sunius crassus, n. sp.
„ pictus, n. sp.
„ confinis, n. sp.
„ catena, n. sp.
„ peltatus, n. sp.
„ palpalis, n. sp.
„ bidens, n. sp.
„ bispinus, n. sp.
„ spinifer, n. sp.
„ celatus, n. sp.
„ insignis, n. sp.

PINOPHILINI.

TÆNODEMA.

Tænodema plana, n. sp.
„ lævis, n. sp.
„ recta, n. sp.
„ lenta, n. sp.
„ dubia, n. sp.
„ quadrata, n. sp.
„ tarsalis, n. sp.
„ bella, n. sp.
„ cinerea, n. sp.
„ vicina, n. sp.
„ similis, n. sp.
„ rudis, n. sp.
„ filum, n. sp.
„ producta, n. sp.
„ laticornis, n. sp.
„ serpens, n. sp.
„ tecta, n. sp.
„ lurida, n. sp.

PINOPHILUS.

Pinophilus dux, n. sp.
„ ater, n. sp.
„ rectus, n. sp.
„ æqualis, n. sp.
„ mimus, n. sp.
„ modestus, n. sp.
„ tenuis, n. sp.
„ distans, n. sp.
„ incultus, n. sp.
„ proximus, n. sp.
„ angustus, n. sp.
„ oblatus, n. sp.
„ extremus, n. sp.
„ sulcatus, n. sp.
„ duplex, n. sp.
„ laxus, n. sp.
„ aberrans, n. sp.
„ bicolor, n. sp.
„ Batesi, n. sp.
„ debilis, n. sp.
„ minor, n. sp.
„ affinis, n. sp.
„ egens, n. sp.
„ abax, n. sp.

PINOPHILINI—*continued.*

ŒDODACTYLUS.

Œdodactylus errans, n. sp.
„ anceps, n. sp.

ŒDICHIRUS.

Œdichirus optatus, n. sp.

PALAMINUS.

Palaminus simplex, n. sp.
„ longicornis, n. sp.
„ modestus, n. sp.
„ crassus, n. sp.
„ robustus, n. sp.
„ breviceps, n. sp.
„ discretus, n. sp.
„ sinuatus, n. sp.
„ apicalis, n. sp.
„ fragilis, n. sp.
„ niger, n. sp.
„ anceps, n. sp.
„ sobrinus, n. sp.
„ puncticeps, n. sp.
„ parcus, n. sp.
„ pellax, n. sp.
„ fuscipes, n. sp.
„ stipes, n. sp.
„ sellatus, n. sp.
„ gracilis, n. sp.
„ distans, n. sp.

STENINI.

STENÆSTHETUS.

Stenæsthetus illatus, n. sp.

STENUS.

Stenus inspector, n. sp.
„ obductus, n. sp.
„ tinctus, n. sp.
„ cognatus, n. sp.
„ vacillator, n. sp.
„ cursitor, n. sp.
„ fallax, n. sp.
„ simulator, n. sp.
„ certatus, n. sp.
„ Traili, n. sp.
„ pedator, n. sp.
„ ventralis, n. sp
„ extensus, n. sp.
„ genalis, n. sp.
„ Paræ, n. sp.
„ nigricans, n. sp.
„ excisus, n. sp.
„ laticeps, n. sp.
„ tricolor, n. sp.
„ heres, n. sp.
„ cevictus, n. sp.
„ Batesi, n. sp.

STENINI—*continued.*

Stenus collaris, n. sp.
„ parviceps, n. sp.
„ proximus, n. sp.

MEGALOPS.

Megalops spinosus, n. sp.
„ impressus, n. sp.

OXYTELINI.

OSORIUS.

Osorius stipes, n. sp.
„ nitens, n. sp.
„ simplex, n. sp.
„ integer, n. sp.
„ solidus, n. sp.
„ affinis, n. sp.
„ oculatus, n. sp.

HOLOTROCHUS.

Holotrochus durus, n. sp.
„ syntheticus, n. sp.
„ pubescens, n. sp.
„ subtilis, n. sp.
„ clavipes, n. sp.
„ Fauveli, n. sp.

BLEDIUS.

Bledius albidus, n. sp.
„ rarus, n. sp.
„ addendus, n. sp.
„ simplex, n. sp.
„ muticus, n. sp.
„ similis, n. sp.
„ modestus, n. sp.

TROGOPHLŒUS.

Trogophlœus mundus, n. sp.
„ breviceps, n. sp.
„ latifrons, n. sp.
„ hilaris, n. sp.
„ vicinus, n. sp.

APOCELLUS.

Apocellus planus, n. sp.
„ lævis, n. sp.

OMALINI.

OMALIUM.

Omalium nanum, n. sp.

PIESTINI.

PIESTUS.

Piestus validus, n. sp.
„ bicornis, Oliv.
„ spinosus, Fab.
„ frontalis, n. sp.

PIESTINI—*continued.*

Piestus rectus, n. sp.
„ minutus, Er.
„ pygmæus, Lap.
„ sulcatus, Grav.
„ rugosus, n. sp.
„ aper, n. sp.

HYPOTELUS.

Hypotelus micans, n. sp.

ISOMALUS.

Isomalus agilis, n. sp.
„ dubius, n. sp.
„ tenuis, Fauv.

LISPINUS.

Lispinus striola, Er.
„ catena, n. sp.
„ apicalis, n. sp.
„ terminalis, n. sp.

PIESTINI—*continued.*

Lispinus punctatus, n. sp.
„ cognatus, n. sp.
„ modestus, n. sp.
„ planus, n. sp.
„ depressus, n. sp.
„ simplex, n. sp.
„ lætus, n. sp.

THORAXOPHORUS.

Thoraxophorus opacus, n. sp.
„ crassus, n. sp.

LEPTOCHIRUS.

Leptochirus fontensis, n. sp.
„ brunneoniger, Perty.
„ latro, n. sp.
„ maxillosus, Fab.

TURELLUS (n. gen.).

Turellus Batesi, n. sp.

## EUDERA.

This genus was established by Fauvel (Notices Entomologiques, 4me part. p. 8), for a small beetle from Chili: and at the same time this savant established another genus (op. cit. p. 10) with the name *Ophioglossa*, for a closely allied insect from the same country. Some differences in the trophi (of which the most important is stated to be the labial palpi bi-articulate in *Eudera*, tri-articulate in *Ophioglossa*), and a slightly longer basal joint of the hind tarsus in *Ophioglossa*, are the only characteristics given to distinguish the two genera; moreover the hind tarsi are figured by the author, and on measuring with compasses the length of the basal joint in the two figures, I find it to be exactly the same: the distinction between the two genera rests therefore entirely on the trophi; and very unsatisfactory such a distinction is in the case of two such minute insects. I feel considerable doubt, after examining a specimen of the insect I here describe under the name of *Eudera cava*, as to whether its labial palpi are bi-, or tri-articulate; but as the *Eudera sculptilis* is known to me, and I am able to say that *E. cava* is certainly closely allied thereto, while I do not know the genus *Ophioglossa*, I have chosen the former name for the generic appellation of my new species. The species I here describe is very remarkable by reason of the extremely large and deep transverse impressions on the basal segments of the hind body; this character dis-

tinguishes it readily from its allies, viz., *E. sculptilis* and the species of *Falagria* and *Autalia*.

It may not be amiss to remark here, that although M. Rey, in the recently published parts of the "Histoire Naturelle des Coleoptères de France," has placed the two genera *Autalia* and *Falagria* in different primary divisions of the *Aleocharidæ*, still the two genera are really allied, as the *Eudera sculptilis* and *cava* undoubtedly indicate.

1. *Eudera cava*, n. sp. Rufescens, antennis basi excepto, capite, elytris, pectoreque obscurioribus; thorace elytrisque dense subtilissime punctatis, abdomine fere impunctato, segmentis 2—4 basi profunde transversim impressis; thorace fortiter transverso, anterius obsolete impresso, basi transversim bifoveolato. Long. corp. $1\frac{1}{8}$ lin.

Antennæ short and stout, the basal joints reddish, the others obscure in colour; 3rd joint stout, a little shorter than 2nd; joints 4—10 similar to one another in length, and each distinctly broader than its predecessor, the 4th not so long as broad, the 10th strongly transverse; 11th joint pointed, as broad as, and more than twice as long as 10th. Head nearly black, short and broad, with a narrow and remarkably abrupt neck, with a transverse impression in front at the insertion of the antennæ, the surface very finely, scarcely visibly, punctured. Thorax obscure reddish, broader than the head, but narrower than the elytra, strongly transverse, the front angles rounded and depressed, the hind ones rectangular; on the middle, in front, is a small indistinct impression, and in the middle, in front of the base, is a kind of transverse impressed line, which is interrupted in the middle, and in certain lights appears to consist on each side of two or three very minute foveæ placed extremely close to one another; the surface is very finely and closely punctured and pubescent. Elytra short and broad, longer than the thorax, the suture depressed at the base behind the scutellum; their colour obscure castaneous, their punctuation very fine, and not so dense as that of the thorax. Hind body broad, above shining and flat; the 2nd, 3rd and 4th segments each with a peculiar large deep transverse impression at the base; at each front angle of these impressions there is a kind of tubercle or projection. Legs rather short; middle coxæ widely separated.

Pará; eight individuals taken two or three years ago; I notice no indications of sexual distinctions among them.

*Obs.*—A closely allied but distinct species occurs at Rio de Janeiro.

### Falagria.

The species of this widely distributed genus appear to be more numerous in tropical America than elsewhere; 23 species of the genus were described by Erichson, and of this number no less than 14 were from the quarter of the globe above mentioned. I here describe three new species, but I have no doubt numerous others are to be found in the Amazon valley. These three species are very dissimilar *inter se;* the *F. Paræ* appears to be rather closely allied to the Eastern *F. flavocincta*, Kr., and *F. fovea*, Sharp; *F. varicornis* is remarkable not only from the great development and elegant colour of its antennæ, but also from the point of insertion of these organs, this appearing to be actually nearer to the vertex than to the front margin of the head. *F. curtipennis* is a very peculiar species; its abbreviated elytra and breast, together with the slender and elongate limbs, give it a peculiar facies; and moreover the mesosternum shows no trace whatever of that division into distinct plates, which is so conspicuous in *F. obscura*, and others of the genus; it is, therefore, very probable that the species may ultimately be considered to belong to a distinct genus.

1. *Falagria Paræ*, n. sp. Rufescens, antennis medio infuscatis, basi cum pedibus testaceis, femoribus basi excepto fuscis, elytris abdomineque fuscis, illis humeris, hoc basi testaceis; capite thoraceque lævis, nitidis, hoc profunde canaliculato; abdomine dense subtilissime punctulato. Long. corp. $1\frac{1}{8}$ lin.

Antennæ rather stout, very nearly half a line in length; the two or three basal joints pale reddish, the following ones infuscate; the 10th and 11th again reddish; 3rd joint shorter than 2nd; 4—10 differing very little from one another in length, each a little stouter than its predecessor; the 10th about as long as broad; 11th scarcely broader than, but twice as long as the 10th, obtusely pointed. Head obscure reddish, shining, impunctate, with a transverse impression between the points of insertion of the antennæ, its breadth about equal to the thorax. Thorax reddish, impunctate, with a deep channel along the middle, rather longer than broad, much narrowed towards the base. Elytra yellowish at the base, elsewhere

infuscate, much broader than the thorax, but scarcely so long, with a small deep fovea behind the scutellum, extremely finely—almost imperceptibly—punctured. Hind body slender, but distinctly narrowed at the base; blackish except at the base, which is yellowish, the segments very finely punctured. Legs yellow, the femora infuscate, except at the base; the front ones however almost yellow.

Pará; a single individual taken two or three years ago by Mr. Smith.

*Obs.*—This species is smaller and more slenderly formed than our European *F. sulcatula*, and the antennæ are similar in structure to those of *F. sulcatula*, but are not quite so much incrassate at the apex.

2. *Falagria varicornis*, n. sp. Rufo-brunnea, nitida, fere lævis, antennis articulo ultimo, femoribus posticis basi, tarsis omnibus, abdomineque basi pallidis, hoc segmentis 3—6 nigris; thorace subcordato, angulis posticis minutis, prominulis, late profundeque canaliculato; elytris hoc longioribus. Long. $1\frac{1}{4}$ lin.

Of an obscure reddish colour, with the elytra rather darker; the hind body, with the exception of its pale base, nearly black; the legs and antennæ variegated. The antennæ are very long and reach beyond the extremity of the elytra, they are reddish at the base; the joints from the middle to the tenth get gradually darker, but the last joint is very pale, nearly white; this joint is elongate and pointed, about the length of the three preceding together. The head is broader than the thorax, reddish, almost impunctate. The thorax is reddish, its length about as much as its greatest width. The posterior angles are very minute and pointed, and directed outwards; it has a very broad and very deep longitudinal channel. The scutellum is delicately margined and furnished with two or three indistinct raised lines. The elytra are darker in colour than the head and thorax, very convex, depressed along the suture and round the scutellum, shining and almost glabrous. The hind body has the two basal segments testaceous, the rest nearly black; the very extremity obscurely paler; it is narrowed at the base, impunctate on the upper side, and only obscurely furnished with hairs. The legs are very long and slender, they are reddish-yellow, the anterior with the tarsi paler, the middle ones have the base of the tibiæ darker, the apex as well as the

tarsi pale; the hind legs have the base of the femora pale, the rest as well as the tibiæ pitchy; but the extremity of the tibiæ and the tarsi are pale.

Of this most elegant species I have seen but one specimen, from Ega.

3. *Falagria curtipennis*, n. sp. Elongata, rufo-testacea, nitida, fere lævis, abdomine subdilatato, segmento quinto piceo. Long. $1\frac{1}{2}$ lin.

This species has a peculiar aspect for this genus, owing to its elongate form, and its hind body being broader than the anterior parts. It is shining, of a yellowish colour, with the fifth segment of the hind body darker; its upper surface is smooth, shining and impunctate; the under surface of the hind body is furnished towards the extremity with numerous hairs. The antennæ are yellow, and reach quite to the extremity of the elytra; they are stout for this genus, and considerably thickened towards the apex; the 2nd, 3rd and 4th joints are slender and elongate, the 3rd a little longer than the 2nd, much longer than the 4th; from the 5th to the 10th each joint is a little broader than the preceding one, the 10th being about as long as broad; the 11th joint is pointed, about as broad as the 10th, but twice as long. The head is quite smooth and shining, quite as broad as the thorax; the thorax is rather longer than its greatest breadth, convex, smooth and shining, with two or three setæ towards the sides; it is subcordate, with the anterior and posterior angles rounded; it is delicately margined at the sides and behind, without channel or fovea. The elytra are not so long as the thorax, and scarcely attain the width of its broadest part; they are just a little darker in colour, impunctate and shining, with a most delicate and sparing pubescence. The hind body is rounded at the sides; it is elongate and considerably broader in the middle than at the base and apex. The legs are yellowish and elongate, the tarsi very slender.

Several specimens from Tapajos.

*Obs.*—A very closely allied species to this one occurs at Monte Video.

## Placusa.

No species with this generic name has yet been indicated as inhabiting the New World; and the species I here

describe does not accord very closely in all its characters with our European species, as will be seen on comparing the observations I have made at the conclusion of the description of *P. confinis* with the generic characters of *Placusa*, as indicated by Rey (Hist. Nat. Col. Brev. Al. Bol. p. 103). I have not ascertained whether the labial palpi of this minute insect are two- or three-jointed.

1. *Placusa confinis*, n. sp. Angustula, subopaca, nigricans, antennarum articulo primo, pedibus elytrisque sordide testaceis, his basi lateribusque fuscis; supra crebre subtiliterque punctata. Long. corp. $\frac{7}{8}$ lin.

Antennæ short, rather slender, blackish, with the base indistinctly paler; 3rd joint small, much shorter than 2nd; 4th and 5th smaller than those following; 6—10 differing but little from one another, transverse; 11th small. Head small, a good deal narrower than the thorax, blackish, finely and not densely punctured. Thorax small, rather strongly transverse, the base rounded, and not perceptibly sinuate, the hind angles very indistinct, the sides distinctly narrowed towards the front; it is blackish in colour, finely and not densely punctured, so as to be a little shining. Elytra short but a little longer than the thorax, blackish at the base and sides, shading into yellow towards the extremity, rather finely and closely punctured. Hind body narrow, pointed, all the segments finely and closely punctured, but still slightly shining. Legs yellow.

In the male the hind margin of the dorsal plate of the 7th segment of the hind body projects a little on each side of the middle, so as to form two very short, obtuse, distant projections, which are not long enough to be called teeth.

A pair of this species, ♂ and ♀, were found at Lagos, on the 5th January, 1875, by Dr. Trail.

*Obs.*—This species, though it has quite the facies of our European *Placusæ*, is narrower than any one of them I am acquainted with. The middle coxæ are quite contiguous, and the middle portion of the front of the metasternum is less acuminate than in the European species; the basal joint of the 4-jointed middle tarsi is distinctly longer than the 2nd, but not nearly so long as the 2nd and 3rd together; and the basal joint of the hind tarsus, though more elongate than that of the middle ones, is not so long as the 2nd and 3rd together.

## Epipeda.

This genus has recently been established and named by Rey, to express the *Aleochara plana*, Gyll., and *Homalota arcana*, Er. The first of these species (the second I do not know) certainly cannot be associated with the *Homalotæ*, on account of the 4-jointed intermediate tarsi; and it appears to me probable that Rey is correct in placing *Epipeda* near *Placusa*. The two species of the genus here described, depart somewhat in their structure from the *Aleochara plana*, and apparently approximate to *Diestota*. Indeed the relationship of *Diestota* with *Epipeda* seems to me to be probably (for I do not know the *D. Mayeti*) much closer than is suggested by Rey, who places the two genera in different "rameaux," on account of the separation of the middle coxæ in the one (*Diestota*) and their contiguity in the other (*Epipeda*); it is precisely in this character that the two species, here described as *Epipeda*, depart from the European species of the genus, and appear to exhibit the connecting links with *Diestota*. I may add that Dr. Trail also brought back an insect which I can scarcely class with either of the two genera, for the middle coxæ are widely separated, while the genæ are very strongly margined. I have unfortunately not been able to describe this interesting species, as the only exponent of it I have received has lost its elytra.

1. *Epipeda cava*, n. sp. Linearis, subdepressa, opaca, nigro-fusca, antennarum articulo primo pedibusque testaceis; prothorace subquadrato, medio late, profundeque impresso; abdomine segmentis 2—4 crebre subtiliter punctatis, 5 et 6 fere impunctatis. Long. 1 lin.

Allied to *Homolata plana*, but smaller, and with much longer antennæ. These are longer than head and thorax, pitchy in colour, with the base paler; they are moderately stout, and scarcely thickened towards the apex; 3rd joint more slender than the 2nd, and scarcely so long; 4—10 differing but little from one another; 4th longer than broad, 10th scarcely so long as it is broad; last joint elongate, quite twice as long as the two preceding together. Head a little narrower than the thorax, formed as in *H. plana*, the front a little depressed; it is of a dark colour, quite dull, punctuation quite indistinct. Thorax about a third broader than long, shaped much as in *H. plana*, dull, its punctuation very dense and indistinct, of a

dark fuscous colour in the middle, with a very broad and deep impression, occupying the whole of the middle portion of the thorax. Elytra but little longer than the thorax, of the same colour, and with similar punctuation. Hind body shaped much as in *H. plana*, segments 2—4 rather closely and finely punctured, 5th sparingly punctured, 6th nearly impunctate. Legs yellowish.

St. Paulo (Amazons); one specimen. I think it is a male; if so, it has no well marked peculiarity as such, unless the very large impression of the thorax be characteristic of this sex, as is quite probable.

*Obs.*—Though much smaller than the European *Epipeda plana*, this species appears to be structurally closely allied thereto; the middle coxæ are however slightly more widely separated, so that the meso- and meta-sternal processes are rather less slender and acuminate in *E. cava*.

2. *Epipeda rufa*, n. sp. Angustula, depressa, dense punctata, rufescens, antennis extrorsum, abdomine pectoreque infuscatis, elytris pedibusque testaceis; prothorace subquadrato, angulis posterioribus obtuse rectis. Long. corp. $\frac{7}{8}$ lin.

Antennæ moderately long, not stout, scarcely at all thickened towards the extremity, the two or three basal joints reddish, the rest darker; 2nd joint about as stout as the 1st; 3rd shorter than 2nd; 4th smaller than the others; 5—10 differing but little from one another; 11th moderately long. Head rather narrow, a good deal narrower than the thorax, distinctly narrowed behind the eyes, infuscate reddish, not at all shining, closely and finely punctured. Thorax slightly narrower than the elytra, almost as long as broad, somewhat straight at the sides, being only a little narrowed behind, and but little rounded near the front angles, the hind angles not at all rounded but distinctly obtuse; dull reddish in colour, finely and closely punctured, quite dull, longitudinally depressed along the middle. Elytra rather elongate, a good deal longer than the thorax, yellow, closely and finely punctured. Hind body parallel, all the segments closely, finely and evenly punctured, infuscate reddish, with the extremity paler. Legs, including the coxæ, clear yellow; metasternum infuscate at the sides, reddish in the middle.

Ega; two individuals in which I see no sexual characters.

*Obs.*—In this species the middle coxæ are quite sepa-

rated, the mesosternal process is elongate, truncate at the extremity and meets the middle process of the metasternum. The middle tarsi are 4-, the hinder 5-jointed. The genæ are not margined.

### Diestota.

This genus has been recently established by Rey, for a minute beetle found at Cette, in flowers of *Cistus:* and it is moreover considered by the French author to form of itself a distinct rameau of his branch *Bolitocharaires.* I am not acquainted with this French insect, and I cannot therefore speak in an unhesitating manner as to the close affinity therewith of the species here described; but so far as I can judge the two form really part of one genus. The relationship of *Diestota* with *Epipeda* seems to me to be closer than supposed by M. Rey; and the two species of the latter genus here described, indicate this affinity in a still more certain manner than does the European *Aleochara plana* (*Epipeda*, Rey).

Rey describes *Diestota Mayeti* as possessing a "sensible" margin to the genæ, but I cannot see any trace of such raised margin in *D. sperata.* I may also add, that trusting to my memory, I believe the insect described by me (Trans. Ent. Soc. Lond. 1869, p. 166) as *Homalota cribriceps*, will be found to belong to this genus; and further, that I think it highly probable that *Diestota* will prove to be synonymous with *Cœnonica*, Kr.

1. *Diestota sperata*, n. sp. Parallela, subdepressa, fusca, prothorace dilutiore; abdomine pedibusque testaceis, illo cingulo lato ante apicem fusco; prothorace valde transverso, basi impresso; abdomine subtiliter, basi crebre, apice parce punctato. Long. corp. 1 lin.

Antennæ rather slender, moderately long, only slightly thickened towards the apex; the three basal joints elongate, 3rd almost as long as 2nd; 4th distinctly smaller than 5th, about as long as broad; 5—10 each of about the same length; the 5th about as long as broad; the 10th distinctly transverse; 11th joint elongate, longer than the two preceding together; their colour is smoky black, with the base a little paler. Head narrower than the thorax, short and broad, but much narrowed behind, closely and finely punctured, not shining, fuscous in colour, with the parts of the mouth obscure yellow. Thorax a little nar-

rower than the elytra, strongly transverse, nearly twice as broad as long; the sides sinuate and narrowed behind; the hind angles obtuse but not rounded, with a transverse impression at the base in the middle, infuscate red, very closely and very finely punctured, quite dull. Elytra a good deal longer than the thorax, very closely and finely punctured, quite dull, in colour darker than the thorax, but similar to the head; their hind margin a little sinuate at the outer angles. Hind body parallel, obscure yellowish in colour; the 5th and 6th segments infuscate, the extremity not so pale as the base; the basal segments are closely and finely punctured, the apical ones sparingly punctured so that they are less opaque than the rest of the upper surface. Legs, including the coxæ, clear yellow.

In the male the hind margin of the dorsal plate of the 7th segment of the hind body terminates in six slender teeth; the four middle ones are equidistant, and each one of them is a little thickened at the extremity, the outside one (on each side) is slightly longer than the middle ones, and is pointed, and is separated from the middle ones by a broader space than divides them from one another.

Rio Purus, Amazons; six specimens found by Dr. Trail on the 13th October, 1874.

*Obs.*—This species appears to vary somewhat in colour and size; and the above description is made from one of the largest and most brightly coloured individuals.

### Brachida.

This genus has recently been established by M. Rey, in the "Histoire Naturelle des Coleoptères de France,"* (*Brevipennes, Aleochariens*), for the European *Homalota notha*. The 4-jointed intermediate tarsi, and the structure of the meso- and meta-sterna, fully justify this course, and prove that the relationship of *H. notha* to other *Homalotæ* is only remote. I here describe two species which must be ascribed to Rey's genus *Brachida*, and I have other allied South American species in my collection.

* It is to be regretted that the volumes of this work are not numbered; four or five different parts each with separate pagination, and indices, bear the above title (*Brevipennes, Aléochariens*), and detailed reference to the work is not easy. It is true that one might use the year of publication for the purpose, but this is sometimes erroneously indicated on the title page, and sometimes more than one part has been published in the same year.

1. *Brachida Batesi*, n. sp. Convexa, ferruginea, antennis medio, capite, prothorace, elytrorumque angulo externo fuscis; abdomine supra subglabro. Long. $1\frac{1}{3}$ lin. (abdomine haud extenso).

Mas: elytrorum angulo externo apicali tuberculo parvo instructo, abdomine segmentis dorsalibus 6 et 7 crebre granulato-asperatis.

Allied to *Homalota notha*, but larger and brighter in colour, and even more like a *Gyrophæna*, by its deflexed head, and curled-up hind body; the colouration is also very much that of a *Gyrophæna*. The antennæ are rather short, considerably thickened towards the apex; the 3rd joint is more short and more slender than the 2nd; the 4th joint is but little stouter than the 3rd, and not quite so long—from this to the 10th each joint is stouter than the preceding one; 5th longer than broad; 10th evidently transverse; 11th joint rather thick, nearly twice as long as the 10th, and rather lighter in colour. Head deflexed, narrower than the thorax, pitchy, very finely and indistinctly punctured. Thorax very short, shaped like that of a *Gyrophæna*, rather narrower than the elytra, more than twice as broad as long, all the angles much rounded; of a pitchy ferruginous colour, almost impunctate. Elytra longer than the thorax, of a tawny colour, a little darker at the external angle, rather closely covered with fine elevated punctures, which are not so distinct about the scutellum. Hind body yellowish, a little darker towards the apex; rather rounded at the sides, narrower at the extremity; shining above, and nearly impunctate, but towards the extremity the segments are furnished with some very fine elevated points; it is clothed on the underside with a dense, fine, erect pubescence. The legs are yellow.

In the male the elytra are provided, near the outer corner, with an elevated tubercle, and the 6th and 7th segments of the hind body are furnished on the upper side with numerous granulations, which are coarser on the 7th than on the 6th segment.

Tapajos; two male individuals.

2. *Brachida Reyi*, n. sp. Rufescens, antennis medio, capite, elytris, abdomineque ante apicem infuscatis; thorace omnium subtilissime punctato, tenuissimeque pubescente; elytris subtiliter punctatis, dense breviterque

pubescentibus; abdomine subtilissime punctato. Long. corp. (capite abdomineque extensis) 1½ lin.

Antennæ slender, scarcely thickened towards the extremity, yellowish, with joints 5—10 nearly black, each joint longer than broad. Head infuscate, very indistinctly punctured, but with a distinct pubescence. Thorax obscure reddish, scarcely visibly punctured, but with a delicate, distinct pubescence; the front angles depressed and rounded, the sides scarcely curved; the hind angles obtuse, the base rounded, very slightly emarginate in front of the scutellum. Elytra a good deal longer, and slightly broader than the thorax, infuscate-red, with the shoulders paler, their punctuation close and fine, but more visible than on the other parts of the surface; the extremity only obsoletely sinuate near the outer angle. Hind body much narrowed towards the extremity, reddish, with the 4th, 5th and 6th segments infuscate, the apex yellowish; the dorsal segments very finely punctured and pubescent. Legs yellowish, rather long and slender.

The male shows no marked external sexual characters; the hind margin of the dorsal plate of the 8th segment is almost truncate, being only very slightly emarginate. In the female the hind margin of the dorsal plate of the 8th segment is deeply emarginate; and the same plate shows, at the extreme base on each side, a deep transverse fovea of which there is no trace in the male.

Pará; several specimens taken two or three years ago.

*Obs.*—A variety occurs in the same locality; it is almost unicolorous reddish, except the middle of the antennæ.

### Myrmigaster, n. gen.

Tarsi anteriores (4-?) intermedii et posteriores 5-articulati.

Prothorax lateribus rotundatis, postice latioribus.

Prosternum carinatum, anterius acute elevatum.

Elytra lateribus haud carinatis.

Abdomen conicum, basi fortiter constrictum, segmentis dorsalibus transversim convexis.

Corpus anterius latius, partibus anterioribus pilis brevibus crassis instructis. Antennæ sat crassæ, evidenter pilosellæ. Thorax coleoptera latitudine excedens, basi utrinque emarginatus, angulis posterioribus acutis retrorsum spectantibus, lateribus rotundatis, angulis anteriori-

bus deflexis, caput amplectentibus. Scutellum transversum, apice conspicuo. Elytra prothorace longiora, apice truncata. Mesosternum inter coxas intermedias longe productum, parte productâ elevatâ. Abdomen convexum, conico-cylindricum, lateribus marginatum, basi fortiter constrictum.

The curious insect for which I propose this generic name is one of the most remarkable of the *Staphylinidæ* found by Mr. Bates. Unfortunately I have seen but a single individual, so that I am able to give its characters in only an incomplete manner. The head is small, deflexed, and much embraced by the angles of the thorax, so that I have been quite unable to see the parts of the mouth; and although I have made a careful examination with the compound microscope, I do not feel quite sure that the front tarsi may not have a minute basal joint. I cannot pronounce on its exact position a confident opinion, but I believe it will ultimately be found allied to *Dinarda*, possibly making an approach from that genus to the wonderful *Corotoca* of Schiödte.

Rey has recently considered the genus *Dinarda* as forming of itself one of the eight primary divisions of the *Aleocharidæ;* this isolated position he assigns to it in consequence of the elytra being compressed and carinated at the sides, which is the case so far as he knows with no other *Aleocharidæ*. The *Myrmigaster singularis* shows, however, no trace of this peculiarity; I myself consider this character to be quite insufficient of itself to justify the prominent isolation given to the two species of *Dinarda* by the learned Frenchman, who actually makes, of the two species of *Dinarda*, the first branch (branche, *Dinardaires*) of the *Aleocharidæ*.

1. *Myrmigaster singularis*, n. sp. Rufo-picea, subnitida, antennis pedibusque testaceis, obsolete punctulata; thorace fortiter transverso; elytris, hoc ter longioribus, apicem versus subattenuatis. Long. $1\frac{1}{2}$ lin.

Antennæ formed as in the genus *Dinarda*, but much more slender, and with their exserted setæ longer; the joints are closely packed, so that the divisions between them are not striking; the 1st joint stouter and longer than the 2nd; the 2nd and 3rd small, the 2nd being the longer of the two; from the 4th to the 10th each joint is but slightly stouter than the foregoing one; the 10th

about as long as broad; the terminal joint not broader than the 10th, pointed, about as long as the two preceding ones together. The head and thorax are of a pitchy or a pitchy-red colour, covered, as are also the elytra, with short, stout, erect setæ. Thorax a little broader than the elytra, more than twice as broad as long, much narrower in front than behind, its middle part a little elevated, the sides deflexed, the middle of the base a little produced in front of the scutellum, the posterior angles acute and projecting backwards. The elytra are rather lighter in colour than the thorax, and about one-third longer; they are narrower at the apex and the base; under the microscope the sculpture of the thorax and elytra is seen to consist of small round smooth spots, between which the surface is coriaceous. The abdomen is much narrower than the thorax; it is nearly impunctate, and very finely pubescent, but the basal segments are also furnished with setæ finer than those of the thorax and elytra: it is very convex above and below, and the first visible segment is much narrowed all round from its apex to its base.

Ega; a single individual, which I suspect to be a male.

### Myrmedonia.

Of this widely distributed genus, nine or ten species have been already described from tropical America: to this number I now add other six species. Of these six species, the first five are pretty closely allied to one another, while the sixth (viz., *M. nitidula*) is very distinct. Rey has recently divided the genus *Myrmedonia* into a number of different genera, distributed among two distinct branches, *Myrmédoniates*, and *Myrméciates*. If this arrangement were adopted, then *M. scabripennis*, *M. pollens*, *M. Batesi*, *M. spinifer*, and *M. fortunata*, would belong to the branch *Myrmédoniates*, and to Rey's genus *Zyras*, or more probably to a distinct new genus to be placed at the head of the branch: while *M. nitidula* would have to form a distinct branch intermediate between the *Myrmédoniates* and *Myrméciates*. I do not, however, adopt this classification; for while I thoroughly appreciate the great addition M. Rey's labours have made to our knowledge, I am quite convinced that the attempt to found new and complicated classifications on the insects of a single country must prove abortive; and probably worse than useless when applied to the insects of the

world at large. Without therefore adopting Rey's names, I prefer to point out that the first five species here described are allied to our *Myrmedonia Haworthi*, but are remarkable by the great development of the spurs at the extremities of the tibiæ. *M. nitidula*, on the other hand, is very distinct on account of the basal joint of the intermediate tarsus, which is only as long as the 2nd joint, while the basal joint of the hind tarsus is only a little longer than the following one; and the spurs at the extremity of the tibiæ are much less developed. It is only when our knowledge of these insects is much more advanced than it is at present, that we shall be able to point out with something like certainty what we may hope will prove stable generic characters.

1. *Myrmedonia scabripennis*, n. sp. Piceo-nigra, nitidula, antennarum basi, pedibusque pallidis, femoribus subtus piceis; prothorace subquadrato, inæquali, fortiter punctato; elytris dense scabrosis, opacis; abdomine supra concavo, lævigato, subtus crebre subtiliter punctulato. Long. $4\frac{1}{4}$ lin.

Mas: abdomine segmento secundo dorsali spinis elongatis tribus armato; seg. 6° utrinque obsolete longitudinaliter plicato; 7° asperato, medio obtuse angulatim elevato.

Fem. latet.

Antennæ longer than the head and thorax; slender, scarcely thickened towards the apex, pitchy, paler at the base; 3rd joint elongate, quite twice as long as the 2nd; 4th shorter than 3rd, but considerably longer than the 5th; 10th about as long as broad; 11th pointed, twice as long as the 10th. Head black, shining, strongly punctured, with a narrow smooth space in the middle. Thorax about as long as broad, scarcely narrowed behind, the base rounded, the hind angles very obtuse, the front ones deflexed and rounded; very strongly and closely, but not deeply, punctured, with a transverse impression in front of the scutellum, and two irregular, not very distinct, smooth spaces on each side near the front (placed one behind the other); on each side it is broadly impressed at the sides behind. The elytra are about as long as the thorax, and nearly twice as broad; more than twice as broad as the head; black, not shining, densely scabrous. Hind body pitchy, shining, narrowed behind; the margins large, and much turned upwards; impunctate, and shining above;

very convex on the under surface, and there closely and distinctly punctured. The legs are pale yellow, the femora pitchy on their hind margin; the hind tarsi long and slender; their basal joint, though not quite so long as the other four together, is longer than the three following taken together.

In the male the second segment of the hind body has on the upper side three long spines, reaching about to the extremity of the next segment, the middle one not quite so long as the side ones; the third segment has its hind margin a little emarginate; the sixth segment has an elevation near each side extending from the base to the extremity, between these it is a little impressed, and immediately in front of the hind margin is furnished with four or five small asperities; the seventh segment is covered above with similar asperities, and is longitudinally elevated or swollen in the middle.

Ega; one male.

2. *Myrmedonia pollens*, n. sp. Picea, antennis pedibusque pallidioribus, thorace elytrisque opacis creberrime ruguloso-punctatis, illo subquadrato, canaliculato; abdomine supra nitidulo obsolete punctulato, subtus crebre punctato. Long. 4¼ lin.

The single specimen before me of this species is clearly immature, so that I shall not give details of its colouring further than to say, that it is of a pitchy colour, with the basal portion of the antennæ and the legs (more particularly the femora) paler. Antennæ with the 3rd joint about twice as long as the 2nd, and one and a-half times the length of the 4th; 5th much shorter than the 4th, longer than broad; 6—10 differing but little in length; the 10th scarcely so long as broad; last joint pointed, about twice as long as the 10th. The head is closely and rather coarsely punctured, with a smooth shining space in the middle. The thorax is about as long as broad, with a distinct longitudinal channel; scarcely narrowed behind; the sides nearly straight from the front to the hind angles; it is moderately finely and very closely punctured, so that it is not at all shining. The elytra are about as long as the thorax and one and a-half times its width, their punctuation extremely close, and finer than that of the thorax, quite dull. The hind body is shining above, and obsoletely but distinctly punctured,

the punctuation being less evident on the apical segments. Beneath it is closely and distinctly punctured. The basal joint of the posterior tarsus about as long as the three following together.

In the female the 6th segment above has a longitudinal elevation on each side; the 7th segment is covered with granulations not much elevated, but with their points directed backwards; these granulations are larger towards the extremity of the segment, and the hind margin is slightly emarginate.

Ega; one specimen, which I consider to be a female.

*Obs.*—Though rather closely allied to *M. scabripennis*, *M. pollens* will be very readily distinguished therefrom by the denser and finer punctuation of the thorax and elytra, and by the less uneven surface of the thorax.

3. *Myrmedonia Batesi*, n. sp. Nigro-picea, nitidula, elytris opacis, brunneis, apicem versus late infuscatis, antennarum basi pedibusque pallidis; prothorace subquadrato, inæquali, fortiter punctato; elytris dense subtiliter scabrosis; abdomine supra lævigato, subtus crebre subtiliter punctulato. Long. 4 lin.

Antennæ moderately long and slender, pitchy, paler at the base; 3rd joint twice as long as the 2nd; 4th shorter than the 3rd, twice as long as the 5th; 5—10 each a little shorter and a little broader than the preceding one, 5th about as long as broad, 10th with the breadth greater than the length; 11th pointed, quite twice as long as the 10th. Head black and shining; front punctured on each side, smooth in the middle. Thorax black, its breadth one and a third times its length, scarcely narrowed behind; the base rounded; the posterior angles extremely obtuse, the anterior rounded and deflexed; its upper surface strongly punctured and uneven, with an impression in front of the scutellum, and with an indistinct longitudinal channel, and a large ill-defined impression on each side, reaching from the posterior angles nearly to the front. Elytra about as long as the thorax, reddish, but all the hind part smoky black, densely and finely scabrous, punctate, more strongly so near the suture behind. Hind body pitchy, with the margins of the segments paler, narrowed behind, and with the basal segment a little constricted, smooth, shining and impunctate above, finely and closely punctured below; the side margins of the segments much

elevated. Legs yellowish; the basal joint of the hind tarsus about as long as the three succeeding together.

In the female the upper side of the sixth segment has an indistinct longitudinal elevation (or two) on each side, and also some scattered fine asperities, with their points directed backwards; the 7th segment is covered above with similar, but larger and more numerous, asperities, and its hind margin is irregularly serrate; the teeth six or eight in number; the lateral margins of these two segments are also indistinctly serrate.

Ega; one female individual.

4. *Myrmedonia spinifer*, n. sp. Rufo-testacea, nitidula, capite, elytrorum maculâ externâ, abdomineque medio nigris, antennis apicem versus infuscatis; prothorace subquadrato, basin versus subangustato, ante scutellum foveolato, fortiter punctato, punctis leviter impressis; elytris dense scabrosis; abdomine supra lævigato, subtus crebre subtilissime punctulato. Long. $3\frac{1}{2}$ lin.

Mas: abdomine segmento 2° dorsali, spinâ elongatâ, tenui armato, marginibus lateralibus angulo acuminato, sexto utrinque longitudinaliter plicato ante apicem granulis duobus instructo, 7° dense granulato, medio tuberculo majori armato, margine apicali obscure serrato, medio leviter emarginato.

Fem. abdomine simplice.

Antennæ rather long and stout, reddish-yellow, infuscated towards the apex; 3rd joint quite twice as long as the 2nd, one and a-half times the length of the 4th; from 5—10 each joint is a little shorter than the preceding, the 5th more than half the length of the 4th, much longer than broad, the 10th about as long as broad; the 11th joint pointed, quite twice as long as the 10th. Head black and shining, strongly punctured, but with a smooth space in the middle. Thorax shining, yellowish, about as long as broad, the sides a little dilated in front; the posterior angles extremely obtuse, with a fovea in front of the scutellum, and an indistict impression on each side behind, covered with large but little-impressed punctures; these punctures nearly disappear in front, and are quite absent at the anterior angles. The elytra are about as long as the thorax and nearly twice as broad, reddish-yellow, with a black spot on the external margin behind, densely covered with coarse asperities or elevations. The hind body is yellowish, marked much with black in the

middle; it is smooth and shining and impunctate, with lateral margins broad and turned outwards as well as upwards. The legs are yellowish; the basal joint of the posterior tarsus about as long as the three following together. In the male the 2nd segment is armed in the middle with a long sharp spine, about as long as the segment itself; the lateral margins of the segments are detached and acuminated behind, but not produced into spines (as they are in *M. scabripennis*); the 6th segment is furnished with a longitudinal plica on each side, and has two tubercles a little before the hind margin. The 7th segment is thickly covered with rather fine granulations, and has a larger tubercle on the middle; its hind margin is obscurely serrated and has a shallow notch in the middle. In the female the 2nd segment is simple and the tubercle of the 7th segment is absent.

Ega; three individuals,—two male, one female.

5. *Myrmedonia fortunata*, n. sp. Rufo-testacea, nitidula, capite nigro, antennis apicem versus, pectore, elytrorum lateribus, abdominisque segmento 5° infuscatis; capite prothoraceque subquadrato crebre fortiter punctatis; elytris hoc fere brevioribus, crebre minus fortiter punctatis; abdomine supra lævigato, subtus sat crebre punctato. Long. $3\frac{1}{4}$ lin.

Antennæ rather long, moderately stout, the four basal joints yellowish, the rest infuscated; 3rd joint twice as long as the 2nd; 4th intermediate in length between the 2nd and 3rd; 5th much shorter than the 4th, rather longer than broad; 5—10 differing but little in length, each slightly stouter than its predecessor; 11th rather stouter than the 10th, but not quite so long. Head blackish, shining, very coarsely punctured. Thorax yellowish, about as long as broad, slightly narrowed behind, very coarsely punctured, obsoletely depressed on each side the disc. The elytra yellowish, infuscate about the apical angle, scarcely so long as the thorax but much broader, closely and moderately finely punctured. The hind body is yellowish, the segments irregularly marked with a pitchy colour; before the apex nearly entirely pitchy; smooth, shining and impunctate above; *distinctly* and *moderately closely* punctured beneath. Legs pale yellow, with the basal joint of the hind tarsus rather longer than the three next together.

In this species the sculpture of the elytra consists of true impressions closely packed, so that the interstices appear like rough irregularly waved lines.

Ega; one female individual.

6. *Myrmedonia nitidula*, n. sp. Castanea, parce subtiliter pubescens, parce obsoleteque punctulata; thorace convexo, transversim subquadrato; elytris hujus longitudinis, abdomine magno, supra omnino lævigato. Long. 2 lin.

Mas (?): abdomine segmento sexto dorsali ante apicem lineis quatuor minus elevatis instructo, inter lineas subtilissime longitudinaliter striguloso; 7° ante apicem granulato, apice serrato.

A shining unicolorous species, with the head and thorax small in proportion to the hind body. Antennæ moderately long, a little thickened towards the extremity, their pubescence well marked; 3rd joint a little longer and rather more slender than the 2nd; 4th joint small, about half the length of the 3rd, and rather smaller than the 5th; 5—10 each is a little shorter and broader than its predecessor, each much narrowed to its base, 5th considerably longer than broad, 10th not so long as broad; 11th joint pointed, fully as stout as the 10th and twice as long. The head is but little narrower than the thorax, shining and impunctate. The thorax is convex, rather broader than long, not at all narrowed behind, the sides being straight, with the anterior and posterior angles rounded; it has a few elevated punctures, from each of which springs a fine short hair. The elytra are about as long as, but much broader than the thorax, a little narrowed at the shoulders: sparingly punctured, the points consisting of very slight elevations, from each of which rises a fine but rather long hair. The hind body is entirely smooth, shining, and impunctate above; it has the margin much developed, and directed outwards as well as upwards; beneath it is finely and sparingly punctured and very delicately pubescent. The legs are yellowish, the tibiæ much ciliated, the basal joint of the hind tarsi not greatly longer than the second.

The male has on the upper side of the 6th segment four slight raised lines, more distinct at their termination; a little before the extremity of the segment, between these lines, are numerous very fine, closely packed, indistinct lines; the hind margin of the 7th segment is serrate, and in front of the margin are some longitudinal granulations.

Ega; a single individual, which I believe to be a male, though I have not seen the ædeagus.

## Calodera.

The insect to which I have given this generic name is one which, in relation to our European species, must be considered very anomalous. The tarsi are all 5-jointed; the head is distinctly constricted behind; the antennæ are elongate, and the basal joint of the hind tarsi, though moderately elongate, is not equal to the two following together; the middle coxæ are rather widely separated, the suture between the meta- and meso-sterna being near the front of the coxæ, and nearly straight. The insect, therefore, is intermediate between Rey's two rameaux of the *Aléocharaires*, which he names *Phlœoparates* and *Calodérates*. I have made use of the generic name *Calodera* rather than *Phlœopora*, because the latter is used only in a restricted sense—that is, for a few species closely resembling one another—while *Calodera* is a very elastic and general term, applied to a number of insects with very different facies, and varying much in structure.

1. *Calodera syntheta*, n. sp. Capite thoraceque fuscis, elytris fusco-testaceis, basi dilutiore, abdomine medio apiceque nigris, pedibus antennisque testaceis, his apicem versus infuscatis; angustula, subtiliter punctata, abdomine fere lævigato, antennis elongatis, prothorace basin versus angustato. Long. corp. 1½ lin.

Antennæ elongate, rather slender, but a little incrassate towards the extremity, the three or four basal joints pale yellow, the following ones darker, and the three or four apical ones strongly infuscate; 3rd joint slightly longer than 2nd; 4th slender and rather long; 10th about as long as broad; 11th joint elongate, about as long as the three preceding joints together, acuminate, its apex rather paler in colour than its base. Head about as broad as the thorax, narrowed behind, with a moderately broad neck; the eyes large, the genæ not margined; blackish in colour, finely punctured, a little shining. Thorax not quite so long as broad, narrower than the elytra, the sides much rounded at the front angles, narrowed and sinuate towards the base, which is rounded; the lateral and basal margins distinct, the hind angles depressed, but a little prominent, and rather obtuse; the colour is deeply infuscate-yellow; the surface indistinctly and not densely punctured, without channel or fovea. Scutellum large; elytra rather longer than the thorax, yellow at the base, infus-

cate towards the apex, finely and not densely punctured, their hind margin almost straight. Hind body rather slender, pale yellow at the base, with the 5th and 6th segments black, the 7th reddish, the apex again dark, the basal segments finely, indistinctly and not closely punctured, the apical ones impunctate. Legs pale yellow.

Garrao; three individuals found in fungus on the 11th November, 1874, by Dr. Trail. I see no characters from which to infer their sex.

### Homalota.

It would not be easy at the present moment to say what the above word represents: to Erichson and Kraatz it represented a vast number of species of minute *Staphylinidæ;* to C. J. Thomson a single species, viz. *Aleochara plana*, Gyll.; while to Rey it appears to have two different and yet simultaneous meanings; first, as representing about forty-five species of French *Aleocharidæ*, and the second, with the affix "*vera*," as representing only ten of those forty-five species.

As to the species here described, I use the word in the general sense of Kraatz and Erichson; for the first five of the six species here described would no doubt have been referred by those authors to the genus *Homalota;* the other species, however, *H. culpa*, is anomalous, inasmuch as the basal joint of the hind tarsus is more elongate than is supposed to be the case with *Homalota:* but, as in the present state of confusion as to the nomenclature of the groups of species of *Aleocharidæ*, I decline to be responsible for a new generic name, I have had no option but to refer this as well as the other species to the genus *Homalota.*

1. *Homalota capta*, n. sp. Nigra, sat nitida, pedibus testaceis, antennarum basi fusco-testaceo; antennis sat brevibus; capite fere transverso, vertice leviter impresso; prothorace valde transverso, dorso minus distincte cum elytris, crebre subtiliter punctatis, his illo longioribus; abdomine basi subtiliter crebre punctato, apice fere lævigato. Long. corp. $\frac{3}{4}$ lin.

Antennæ rather short, and not stout, black, with the base paler, a little thickened towards the extremity; 1st joint thick, and much longer than 2nd; 3rd rather short and stout, shorter than 2nd; 4th to 10th scarcely

different from one another in length, but the 4th not more than half as broad as the 10th; this latter as well as the preceding joints strongly transverse; 11th joint moderately long, quite as long as the two preceding together. Head short and broad, but distinctly narrower than the thorax, black, very finely punctured, the punctures absent from a longitudinal space on the middle, and the hinder part slightly impressed on the middle. Thorax almost as broad as the elytra, twice as broad as long, very finely and moderately closely punctured, with a slight depression on the disc. Elytra a good deal longer than the thorax, finely and moderately closely punctured. Hind body distinctly narrowed towards the extremity, the basal segments finely and rather closely, the apical ones sparingly punctured. Legs yellow, but a little infuscate.

In the male, the hind margin of the dorsal plate of the 7th segment of the hind body is furnished in the middle with three rather approximate, equidistant, similar spines, and on each side with an extremely long, slender, pointed spine, which is a little incurved.

A single male was found by Dr. Trail at Barreiras de Janarape, Rio Solimoes, on the 9th January, 1875.

*Obs.*—This species has the middle tarsi 5-jointed; the middle coxæ are distinctly separated, the meso- and metasternal processes both acuminate, and meeting one another about half-way between the coxæ; the genæ appear to me to be very finely margined. It much resembles the European *H. indiscreta*, Sharp, but is decidedly smaller, and has the male characters very different.

2. *Homalota tenax*, n. sp. Fusca, pedibus testaceis, antennarum basi fusco-testaceo, thorace abdomineque segmentis basalibus obscure rufescentibus; antennis crassiusculis; thorace transverso, elytris breviore; abdomine subparallelo, segmentis basalibus sat crebre, apicalibus parce punctatis. Long. corp. $1\frac{1}{8}$ lin.

Antennæ stout, moderately long, black, the basal joint obscurely pale; 3rd joint stout, nearly as long as 2nd; 4th smaller than the others and scarcely so long as broad; 5—10 differing but little from one another, each distinctly transverse; 11th joint rather elongate, fully twice as long as the 10th. Head short and broad, finely and not densely punctured, nearly black. Thorax a little narrower than the elytra, broader than long, slightly rounded at the sides

and a little narrowed towards the front, the base much rounded, the hind angles quite indistinct; it is rather paler in colour than the head and elytra, finely and not closely punctured. The elytra are distinctly longer than the thorax, but their punctuation is similar to it; their hind margin is not sinuate. Hind body with the basal segments distinctly and not densely, the apical one sparingly punctured; the three basal segments reddish, the others darker. Legs yellow.

In the male, the hind margin of the dorsal plate of the 7th segment of the hind body has in the middle a long and broad projection which is divided in the middle, each side being rounded, while at each side the hind margin terminates in a long, slender, pointed and incurved spine, which projects fully as far backwards as the central process.

Barreiras de Janarape, 9th January, 1875, a single male brought back by Dr. Trail.

*Obs.*—Though much smaller, this species is somewhat similar to *H. fungicola*, particularly in the structure of its antennæ. The genæ are very finely margined, the middle coxæ distinctly separated, the mesosternal process much produced between them.

3. *Homalota brevis*, n. sp. Opaca, breviuscula, testacea, nigro-cingulata, antennis extrorsum infuscatis; oculis magnis; prothorace valde transverso; abdomine crebre punctato. Long. corp. $\frac{3}{4}$ lin.

Antennæ stout, the three or four basal joints pale yellow, the others infuscate; 3rd joint more slender and rather shorter than 2nd; 4—10 about equal to one another in length, each a little broader than its predecessor, the 4th about as long as broad, the penultimate ones transverse; 11th broad, quite as long as the two preceding together. Head broad and short, but a good deal narrower than the thorax, the eyes occupying nearly all the sides; blackish in colour, finely punctured. Thorax distinctly narrower than the elytra, strongly transverse, the base much rounded, but a little truncate in front of the scutellum, the hind angles indistinct; it is yellowish in colour, finely punctured, without channel or impression. Elytra broad, longer than the thorax; black with a violet tinge, closely and finely punctured, their hind margin not at all sinuate at the outer angles. Hind body broad and

short; the three or four basal segments yellow; the following three abruptly black, the extremity infuscate-yellow; the segments are finely and rather closely punctured, the apical ones not so densely, however, as the basal ones. The legs, including the coxæ, are pale yellow.

Garrao; five individuals found in fungus by Dr. Trail on the 11th November, 1874. I see no indications of external sexual characters.

*Obs.*—This species is similar in size and form to our European *H. celata*, but the colouration is rather that of *Gyrophænæ*. The genæ are finely margined; the middle coxæ quite separated; the metasternum is much produced between them, and is separated only by a narrow space from the extremity of the mesosternal process, the extremities of both processes being rounded; the middle tarsi are 5-jointed, the basal joint a little longer than the 2nd; 2—4 about equal to one another; hind tarsi with the 2nd joint a little shorter than the 1st, and the 3rd a little shorter than the 2nd, slightly longer than the 4th.

4. *Homalata gilva*, n. sp. Testacea, elytris abdomineque cingulo ante apicem nigricantibus; prothorace transverso, basi rotundato; abdomine basi crebre subtiliter, apice parce punctato. Long. corp. $\frac{3}{4}$ lin.

Antennæ moderately long and stout, yellow; 3rd joint shorter and more slender than 2nd; 4th joint very small; 5th a good deal larger than 4th; 6—10 each slightly shorter and broader than its predecessor, the 6th about as long as broad, the 10th rather strongly transverse; 11th joint large, longer than the two preceding ones together. Head short and broad, a good deal narrower than the thorax; dark yellow, very finely punctured, not shining; the eyes large. Thorax strongly transverse, nearly as broad as the elytra, the sides slightly narrowed behind, the base much rounded; it is yellow in colour, not at all shining, very finely punctured, without channel or fovea. Elytra short, but a little longer than thorax, infuscate; the base paler, finely and closely punctured, quite dull; the hind margin straight. Hind body yellow, with the 5th segment black; the basal segments finely punctured, the sixth nearly impunctate. Legs pale yellow.

In the male the dorsal plate of the 7th segment of the hind body is deeply emarginate on each side, so as to form

a large central lobe, and on each side a projecting spine; the central lobe is itself emarginate at the hind margin, and its angles are quite rounded; the lateral spine on each side is pointed, and very nearly straight, and does not extend quite so far backward as the most prominent part of the central lobe.

Garrao; a single male, found with *H. brevis*.

*Obs. I.*—The middle tarsi in this species are 5-jointed, the two basal joints being short, and similar to one another in length; the four basal joints of the hind tarsus also differ but little from one another in length; the middle coxæ are distinctly separated; the apices of the meso- and metasternal processes are rounded and widely separated from one another by a black space.

*Obs. II.*—This species is smaller and narrower than *H. brevis*, to which it bears a considerable resemblance; the antennæ are rather more slender, and the hind body less densely punctured. The individual described is perhaps immature.

5. *Homalota Traili*, n. sp. Testacea, capite, elytris, pectore, abdomineque cingulo ante apicem infuscatis; antennis fuscis, basi apiceque testaceis; prothorace transverso, medio indistincte impresso; abdomine basi sat crebre, apice parce, punctato. Long. corp. $\frac{7}{8}$ lin.

Antennæ rather stout, only moderately long, the two or three basal joints obscure yellow, the following ones infuscate, the 11th clear yellow; 3rd joint slender at base, but broad at apex, almost equal to 2nd joint in length and breadth; 4th not shorter and only slightly narrower than 5th, hardly so long as broad; 5—10 differing but little from one another, each transverse, the 10th more strongly so than the 5th; 11th joint rather elongate, quite as long as the two preceding together. Head broad and short, the eyes moderately large, infuscate-yellow, finely punctured, with the vertex depressed in the middle. Thorax rather strongly transverse, slightly narrower than the elytra, nearly straight at the sides, with the base rounded, yellowish in colour, very finely punctured and obscurely impressed along the middle. Elytra a little longer than the thorax, finely and closely, but distinctly, punctured. Hind body yellow, with the 5th and 6th segments infuscate, very finely and not densely punctured, the apical segments rather more sparingly so than the basal ones. Legs pale yellow.

In the male the hind margin of the dorsal plate of the 7th segment of the hind body is emarginate in the middle, and on each side of the middle, so as to form four almost equidistant teeth; the middle ones are short prominences, the lateral ones are quite as elongate as the middle ones and more slender and more spine-like.

Rio Purus; a single male found by Dr. Trail (after whom I have named the species), on the 13th Oct. 1874.

*Obs.*—This species in the structure of its tarsi and sternal processes much resembles *H. gilva;* it is rather larger than that species, has the surface less opaque because less densely punctured; the antennæ differently coloured, with the 4th joint larger, and the male characters different. From *H. brevis*, the less densely punctured upper surface, and the different structure of the intermediate joints of the antennæ, readily distinguish it. It is probable that the individual described is a little immature.

6. *Homalota culpa*, n. sp. Rufo-testacea, antennis apicem versus pallidioribus; capite, elytrorum medio, abdomineque ante apicem, infuscatis; capite, thorace, elytrisque subtiliter punctatis, abdomine impunctato; prothorace transversim subquadrato. Long. corp. $1\frac{3}{5}$ lin.

Antennæ stout, moderately long, a good deal thickened towards the extremity, the basal portion yellowish, the apical very pale yellow; 2nd and 3rd joints elongate, about equal to one another; of 4—10 each is distinctly broader, but scarcely shorter than its predecessor, the 4th longer than broad, the 10th rather strongly transverse; the 11th joint rather stout, as long as the two preceding together. Head broad and short, without distinct neck, a good deal narrower than the thorax, finely punctured, infuscate. Thorax about as broad as the elytra, a good deal broader than long, the sides a little rounded in front, distinctly narrowed behind the middle, the hind angles distinct but very obtuse, the sides and base with a very fine but distinct margin; the colour is yellowish, the surface very finely punctured without channel or fovea. Elytra broad and short, a little longer than the thorax; their hind margin not (or scarcely) sinuate at the outer angles, their colour yellowish, but with a very broad, ill-defined, smoky-violet colour across the middle, their punctuation fine and rather dense. Hind body broad, a little rounded at the

sides and narrowed behind, yellowish in colour, with the 6th segment infuscate, shining and without punctuation; beneath finely and closely punctured and pubescent. Legs pale yellow. Tibiæ slender and elongate.

Tapajos; two specimens. Perhaps found in company with *Oxypoda aliena*, which the species much resembles, though it is a good deal larger.

*Obs.*—In this species the genæ are immarginate; the middle coxæ are widely separated; the apex of the metasternum is truncate and separated from the little produced portion of the mesosternum by a narrow black space. The anterior tarsi are 4-, the intermediate and posterior 5-jointed; the basal joint of the middle tarsus is about equal in length to the 2nd joint; the basal joint of the hind tarsus is elongate and about equal in length to the two following joints together.

### Tachyusa.

About thirty species, most of them European, are at present included under this generic name; none of them are from tropical America, but two are described by Fauvel, from Chili. The genus has not yet been treated of by Rey, but we may confidently expect that in the forthcoming part of his work the name *Tachyusa* will be used with a very different application to that of the works of Erichson and Kraatz.

As regards the two species here described I need only remark that they appear closely allied inter se, and that they are not nearly allied to any of our European species.

1. *Tachyusa picticornis*, n. sp. Testacea, nitidula, fere impunctata, antennis articulis 3—6 rufescentibus, 7—11 albidis. Long. corp. $1\frac{2}{3}$ lin.

Broader than *T. ferialis*. Antennæ long, reaching about to the end of the elytra, rather stout for this genus, a little thickened towards the extremity; joints 1 and 2 yellowish; 3rd joint one and a half times the length of the 2nd; 4th about as long as the 2nd, but stouter; 5—10 each just a little shorter and stouter than the preceding, 5th much longer than broad, 10th about as long as broad; last joint long and pointed, two and a half times the length of the tenth; joints 3—6 brownish, those beyond abruptly paler, almost white. Head about as broad as the thorax, yellowish; the eyes black, large and pro-

minent. Thorax about as long as broad, dilated in front, with the anterior angles rounded; again just a little broader at the posterior angles, which are deflexed and obtuse; yellowish, shining and impunctate. Elytra much broader and a little longer than the thorax, also a little darker in colour. Hind body smooth, shining and impunctate, its sides gently rounded, scarcely any narrower at the base than at the 6th segment. Legs yellow, elongate and slender; posterior tarsi with the three basal joints elongate, each a little shorter than the preceding one; middle coxæ widely separated, mesosternum very little produced between them, and separated from the produced point of the metasternum by a broad space.

Tapajos; one individual.

2. *Tachyusa extranea*, n. sp. Rufo-testacea, capite, elytris abdominisque segmento sexto obscurioribus; subtilissime punctulata, thorace subquadrato, obsolete canaliculato, elytris hujus longitudinis. Long. corp. $1\frac{1}{4}$ lin.

This species has much the form of a *Homalota*. The antennæ are yellowish, elongate and rather stout, slightly thickened towards the apex; 3rd joint a little longer than the 2nd; 4th shorter than the 2nd; 5—10 differing but little in length, 10th about as long as broad; 11th joint long, rather pointed, more than twice as long as the 10th. Head brownish-yellow, slightly narrower than the thorax, short, smooth, shining and impunctate. Thorax yellowish, with the sides in front dilated, rounded and much deflexed; it is about as long as broad, indistinctly channelled, almost imperceptibly punctured. The elytra are broader than the thorax, about as long, a little darker in colour, and with their punctuation not quite so obsolete. The hind body is but little narrowed at the base; it is yellowish, with the 6th segment a little darker; it is smooth, shining and impunctate. The legs are yellowish; the posterior tarsi slender and moderately long.

Tapajos; two individuals, much mutilated.

*Obs.*—This species appears to be nearly allied to *T. picticornis*, at any rate in so far as the structure of the sternum is concerned; its tarsi I have been unable to examine. Its smaller size and unicolorous antennæ render it easily distinguishable from *T. picticornis*.

### Oxypoda.

Only one species with this generic name is as yet described from tropical America; a number of species have, however, been described from Chili by M. Fauvel. The single species I here describe differs a good deal in its form from our European species of the genus, and resembles rather the Chilian *O. scutellata*. I have also one or two other closely allied Brazilian species in my collection, so that probably these South American species will be distinguished ultimately as a separate genus.

1. *Oxypoda aliena*, n. sp. Latior, omnium subtilissime punctulata, prothorace valde transverso, elytris latiore; abdomine apicem versus attenuato, evidentius pubescente; testacea, elytris abdomineque ante apicem fusco-signatis. Long. corp. 1 lin.

This species is remarkable for its short and very broad form, its prothorax being particularly broad and short. Antennæ yellow, rather long, distinctly thicker towards the apex; joints 2 and 3 about of equal length; 4th joint much shorter than the 3rd; from the 4th to the 10th the joints differ but little in length, each is just a little broader than its predecessor, 4th joint slender, much longer than broad, 10th about as long as broad; last joint long, quite twice as long as the 10th, rather pointed. Head broad, nearly half as wide as the thorax, yellow, shining, and with the finest possible punctuation and pubescence. Thorax three times as broad as long, the sides very gently rounded, just a little narrower at the front than at the hind angles; all the angles, especially the front ones, extremely rounded, without channel or fovea, yellow, and with an almost invisible punctuation and pubescence. Elytra distinctly narrower than the thorax, but about as long, yellow, slightly obliquely darker across the middle with the external angle a little paler, with an extremely fine punctuation and pubescence. Hind body much narrowed at the apex, extremely finely and closely punctured, with a depressed, long and distinct, though extremely fine pubescence; the 5th segment a little darker in colour than the others. Legs yellow; hind tarsi with the joints elongate and slender, the 1st more than twice as long as the second.

Tapajos; four individuals.

ALEOCHARA.

The four species described under this generic name appear to be closely allied in structure to one another and to the European *A. fuscipes*. Allied species appear to be found all over the world, and some species have an extremely wide geographical range. I have, however, seen no specimens of any of the species here described from any other locality than the Amazons, and I have also failed to identify any of the four with species previously described from tropical America; in which part of the world, I may remark, that allied species are no doubt pretty numerous, though as yet scarcely a dozen have been described as purporting to belong to the genus and to the locality mentioned.

1. *Aleochara prisca*, n. sp. Latior, nigra, antennis medio subincrassatis, elytris fuscis, thorace brevioribus; pedibus fusco-testaceis, ano rufo-testaceo, abdomine sat crebre minus fortiter punctato. Long. corp. 4 lin.

Allied to *A. fuscipes*. Antennæ black, very stout, with the joints very short; 2nd and 3rd joints slender, the latter the longer; 4th strongly transverse; 5—7 similar to one another, 5th considerably broader than the 4th, after the 7th slightly narrower again to the extremity. Head very much narrower than the thorax, distinctly but not closely punctured. Thorax rather narrowed in front, its breadth about one and a half times its length, moderately closely and distinctly punctured. Elytra considerably shorter than the thorax, not quite black, closely and distinctly punctured. The hind body is broad, not narrowed till the 6th segment, moderately closely and strongly punctured; the punctuation of the basal segments finer than that of the rest; the 7th segment, as well as the hind margin of the 6th, reddish. Legs pitchy, with the anterior tibiæ yellowish.

Ega; one specimen, which appears to be a female.

*Obs.*—This species appears to be very closely allied to the European *A. fuscipes*, but it has the elytra darker and the extremity of the hind body paler; the 4th joint of the antennæ is more transverse; the head has an impunctate space on the disc, and the punctuation of the hind body is rather finer and closer.

2. *Aleochara verecunda*, n. sp. Nigra, antennis basi,

pedibusque testaceis, elytris thorace brevioribus anoque obscure rufis; thorace crebre minus subtiliter punctato; abdomine apicem versus subattenuato. Long. corp. 3½ lin.

Allied to *A. fuscipes*, and almost equal in size thereto, but rather more slender, and with the red of the extremity of the hind body more distinct. The antennæ are short and stout, the three first joints yellow; the 3rd a little longer than the 2nd; the 4th strongly transverse, but much narrower than the 5th; the rest strongly transverse, slightly narrower after the 7th to the extremity; last joint quite twice as long as the preceding one. Palpi obscurely yellowish. Head narrow, scarcely half so wide as the thorax, rather coarsely but not closely punctured. Thorax narrowed to the front, its breadth quite one and a half times its length, closely and strongly punctured. Elytra considerably shorter than the thorax, reddish, closely and rather strongly punctured. Hind body slightly narrowed to the extremity; 2nd and 3rd segments sparingly and finely punctured, the rest coarsely but not closely; the 7th segment and the hind portion of the 6th reddish. Legs dull yellowish.

Tapajos; one specimen, which is, I have no doubt, a female.

*Obs.*—Though closely allied to *A. prisca*, this species may be readily distinguished from it by the pale basal joints of the antennæ.

3. *Aleochara auricoma*, n. sp. Rufo-testacea, fulvo-pubescens, capite nigro, antennis abdominisque segmentis 2—5 nigricantibus; elytris thorace brevioribus; abdomine segmentis 3—7 sat crebre punctatis. Long. corp. 4 lin.

Antennæ blackish, with the apical joint blackish-yellow, stout; 3rd joint one and a half times the length of the 2nd; 4th scarcely so long as broad; 5—10 strongly transverse; last joint elongate, rounded at the extremity, more than twice as long as the tenth. The head is black, rather strongly but not closely punctured. The thorax is yellow, ample, its breadth one and a third times its length; its base and hind angles much rounded, narrower in front than behind; it is moderately, finely and closely punctured, without channel or fovea. The elytra are not more than two-thirds the length of the thorax, with a similar colour and punctuation to it. The hind body is pitchy-red at the extreme base, the segments becoming darker

till the 5th, which is quite black; the 6th and 7th bright-orange; segment 2 almost impunctate; the 3rd rather sparingly and moderately finely, the 4th—7th evenly and distinctly, but not densely, punctured. Legs yellow.

Ega; two specimens, one of which I have ascertained by dissection to be a male, while the other I suppose to be a female. The male carries no external indication of its sex; the dorsal and ventral plates of the 7th segment are both truncate, with the angles rounded, and without visible crenulations.

4. *Aleochara mundana*, n. sp. Ferruginea, capite abdomineque (apice excepto) nigricantibus; crebre sat fortiter punctata; elytris thorace brevioribus. Long. corp. $2\frac{1}{2}$—$2\frac{3}{4}$ lin.

Similar in build to *A. tristis*, but rather larger, very differently coloured. Antennæ tawny, the 3rd joint a little longer than the second, 4th short and transverse, 5th considerably broader than the 4th; after this the joints become no broader, each markedly transverse; the last joint twice as long as the preceding. Palpi tawny. Head black, half the width of the thorax, moderately distinctly punctured, with a well-marked yellow pubescence. Thorax tawny, nearly twice as broad as long, a little narrowed in front, rather closely and finely punctured, with a yellow pubescence. Elytra tawny, very short, considerably shorter than the thorax, rather closely and finely punctured. Hind body tawny black at the base, darker till the 5th segment, which is quite black; the 6th segment (except the base) and the 7th orange-coloured; rather closely punctured, the basal segments more finely than the apical ones; scarcely narrowed till the 6th segment. The legs are yellow.

This is probably a very common species in the Amazon district, extending from Pará to Ega. I have five specimens before me, coming from Pará, Tapajos and Ega; one of them bears a ticket,—" in dung."

*Obs.*—This species, though very closely allied to *A. auricoma*, is easily distinguished therefrom; it is a little smaller, and its colours are not quite so brightly contrasted; the antennæ are paler and less stout than in *A. auricoma*, and the punctuation of the upper surface is a little finer and closer. There are no external marks of the sexes to be seen.

### Gyrophæna.

Eleven species referred by me to this genus are here described: one of these, viz., *G. pumila*, is among the smallest of known *Staphylinidæ*; two others, *G. boops* and *G. debilis*, depart widely from the European species of the genus, inasmuch as they have the eyes of unusual size, far surpassing in this particular any other *Aleocharidæ* known to me. Erichson has already described, from Brazil and North America, one or two species resembling them in this respect, and the European species differ somewhat from one another in the size of the eyes and the form of the head, so that I do not consider that it is at present advisable to make a distinct generic name for these insects.

The genus, as at present understood, is probably distributed over nearly all quarters of the world, but the extra-European species as yet described are not very numerous; only three, in fact, have yet been described from tropical America; though, judging from the number here described, as well as from numerous other species in my collection, it is pretty certain that these insects will prove to be very rich in species in South America.

1. *Gyrophæna pumila*, n. sp. Fusca, nitidula, fere impunctata, antennis pedibusque testaceis, prothorace valde transverso, basi et lateribus rotundatis. Long. corp. $\frac{1}{2}$ lin.

Antennæ short and stout, yellow; 2nd joint stout; 3rd joint small, much shorter and thinner than 2nd, the basal much narrower than the apical portion; 4th joint much smaller than the following ones; 5—10 nearly equal to one another in breadth, the 10th, however, a little broader and longer than the 5th, each of them transverse; 11th joint stout, obtuse. Head small, a good deal narrower than the thorax; the eyes small, the surface smooth and shining. Thorax very transverse, a little narrower than the elytra, more than twice as broad as long; the base greatly rounded, the surface smooth and shining. Elytra short, a little longer than the thorax, with a few indistinct and distant punctures. Hind body impunctate. Legs yellow.

Rio Purus, 24th September, 1874, Dr. Trail; a considerable number of examples were found, but most of them

have come to pieces in the spirit in which they were preserved.

*Obs.*—This minute insect is smaller than the European *G. boleti*, and in size scarcely equals our smallest *Oligotæ*. I find it not easy to see with distinctness the form of the hind margin of 7th segment, but I believe the dorsal plate has the hind margin a little obtusely prominent in the middle, and has a curved spine on each side.

2. *Gyrophæna parvula*, n. sp. Nigro-fusca, nitidula, fere lævis, elytris parce punctatis, antennis pedibusque testaceis; prothorace valde transverso, basi et lateribus rotundatis. Long. corp. $\frac{5}{8}$ lin.

This species is extremely similar to *G. pumila*, but the elytra are more distinctly, and not quite so sparingly strewed with punctures, which on examination with a high power appear to me to be fine elevated granules; besides this, it is larger and broader, with the head especially a good deal broader; in other respects it appears extremely similar to *G. pumila*.

A single individual, found on the Rio Purus with *G. pumila* by Dr. Trail.

3. *Gyrophæna parca*, n. sp. Nigro-fusca, nitida, antennis fuscis, basi pedibusque testaceis; parcissime punctata, prothorace valde transverso, disco subtiliter quadripunctato. Long. corp. $\frac{7}{8}$ lin.

Antennæ short and stout; the four basal joints yellow, the others infuscate; 3rd joint much smaller than 2nd, its basal portion constricted; 4th joint extremely small; 5—10 similar to one another, each rather strongly transverse; 11th short and obtuse. Head broad, but a good deal narrower than thorax, shining, black, with a few very fine punctures; the eyes moderately large. Thorax strongly transverse, much rounded at the base, and distinctly narrowed towards the front; pitchy, very shining, with four fine punctures on the middle, placed so as to form the corners of a square. Elytra short, but a good deal longer than the thorax, pitchy, shining, with a very few indistinct punctures. Hind body pitchy, slightly paler at the base and extremity; almost impunctate, but not quite so shining as the anterior parts. Legs yellow.

In the male the hind margin of the dorsal plate of the 7th segment of the hind body is produced in the middle so

as to form two short, stout, almost confluent teeth, and it has also at each outer angle a rather longer and more slender pointed spine.

Rio Purus, 13th October, 1874, and Garrao, 11th November, 1874; a single male from each locality, captured by Dr. Trail.

4. *Gyrophæna lævis*, n. sp. Sat convexa, nitidula, nigro-picea, antennarum basi pedibusque testaceis; prothorace disco quadripunctato; elytris parce punctatis. Long. corp. 1 lin.

In the male the hind margin of dorsal plate of the 7th segment of the hind body is armed in the middle with two fine, pointed, approximate spines, and on each side with a stouter, distinctly incurved spine; the hind margin is most prominent in the middle, so that though the outer spines are considerably longer than the two middle ones they do not project farther backwards.

Garrao, 11th November, 1874; two male individuals found in fungus by Dr. Trail.

*Obs.*—This species is excessively closely allied to *G. parca*, and agrees almost exactly with it in most respects; but it is a little larger and more convex, and is readily distinguished by the different character of the teeth on the 7th segment of the hind body in the male.

5. *Gyrophæna juncta*, n. sp. Picea, nitidula, antennarum basi pedibusque testaceis; elytris abdomineque castaneis, hoc ante apicem piceo, illis versus angulos externos infuscatis; prothorace valde transverso, disco quadripunctato, elytris apicem versus fortiter punctatis. Long. corp. 1 lin.

Antennæ only moderately stout, the first four joints yellow, the others infuscate; 3rd joint small, very much smaller than 2nd; 4th minute; 5—10 differing little from one another, transverse, but not strongly so; 11th obtuse. Head pitchy, with some fine but distinct punctures on each side; it is much narrower than the thorax. Thorax very transverse, the base rounded, the sides only a little narrowed towards the front; it is of a shining pitchy colour, and on the disc has four rather fine punctures. Elytra distinctly longer than the thorax, of a chestnut-yellow colour, but infuscate at the sides towards the hinder angle; they are shining, and have some unevenly distributed

coarse punctures, they being most numerous and distinct towards the outer angle. Hind body dark yellowish, but infuscate towards the extremity, extremely obsoletely punctured. Legs yellow.

In the male the hind margin of the dorsal plate of the 7th segment of the hind body bears in the middle two fine approximate spines or teeth, and at each outer angle a stouter acuminate spine.

Garrao; a single male found in fungus by Dr. Trail, 11th November, 1874.

*Obs.*—The male characters here scarcely differ from *G. lævis*, but in other respects the two species are easily distinguished; the coarse punctures on the elytra of the *G. juncta* will afford an easy means of distinguishing the species from *G. lævis*.

6. *Gyrophæna convexa*, n. sp. ♂. Nitidula, picea, antennarum basi, abdomine pedibusque testaceis; prothorace antrorsum angustato, disco quadripunctato; elytris parcius granulatis; abdomine obsoletissime punctulato. Long. corp. $1\frac{1}{8}$ lin.

Mas: abdomine segmento 7° dorsali apice, medio laminâ magnâ triangulari apice fissâ, utrinque spinâ elongatâ.

Antennæ with the four basal joints yellowish, the others blackish; 3rd joint rather shorter than 2nd; 4th much smaller than any of the others; 5—10 scarcely differing from one another, each about as long as broad; 11th joint rather short, quite as stout as, and a good deal longer than, the 10th. Palpi pale yellow. Head much narrower than the thorax, the eyes moderately large and finely granulated, pitchy in colour, and with a series of about four fine punctures on each side the middle. Thorax strongly transverse, rounded at the sides and narrowed towards the front; the base distinctly margined and slightly truncate in front of the scutellum, and a little sinuate on each side near the outer angle; the colour is pitchy, and on the disc are four large equidistant punctures; between these and each side is a finer puncture, and there are also two or three fine punctures very close to the front margin. Elytra short and broad, about as long as the thorax, pitchy, with the shoulders paler, along the suture with a series of fine tubercles and with other tubercles elsewhere. Hind body broad, yellow, almost impunctate. Legs pale yellow.

In the male the 6th dorsal segment is opaque and bears a few obsolete tubercles; the dorsal plate of the 7th segment is transversely depressed along the middle, and beyond the depression is produced as a large triangular plate, the apex of which is divided by a narrow slit; on each side is a long pointed spine, directed inwards, and attaining a similar length to that of the central plate.

A single male individual of this species was found in fungus by Dr. Trail, at Garrao, on the river Jurua, on the 11th of November, 1874.

7. *Gyrophæna sparsa*, n. sp. Convexa, nitidula, picea, antennarum basi, pedibusque testaceis; abdomine basi dilutiore; prothorace valde transverso, disco quadripunctato; elytris parce tuberculatis, versus angulos externos lævibus. Long. corp. vix 1 lin.

Antennæ short and stout, the four basal joints yellow, the others darker; 3rd joint very small, much smaller than 2nd; 4th very minute; 5—10 very similar to one another, rather strongly transverse; 11th short and obtuse. Head a good deal smaller than the thorax, pitchy, shining, scarcely visibly punctured. Thorax strongly transverse, much rounded at the base, which is a good deal emarginate in the middle in the front of the scutellum; the sides also a good deal rounded; it is of a shining, pitchy colour, with four fine punctures on the disc. Elytra a good deal longer than the thorax, rather paler in colour, very shining, with a few rather coarse elevated tubercles, which however do not extend to the outer angles. Hind body impunctate, pitchy yellow, with the penultimate segments pitchy. Legs yellow.

In the male the hind margin of the 7th segment of the hind body forms in the middle a rather large triangular projection, and at each outer angle has a curved, pointed spine, which reaches a little further backwards than the middle projection.

Garrao; a single male found in fungus on the 11th of November, 1874, by Dr. Trail.

8. *Gyrophæna quassa*, n. sp. Picea, nitidula, antennis pedibusque testaceis, illis basi quam apice dilutioribus, abdomine rufo-obscuro, ante apicem piceo; prothorace transverso, fere impunctato; elytris parce tuberculatis. Long. corp. $1\frac{3}{16}$ lin.

Antennæ moderately long and not stout, yellowish, with the four basal joints paler than the others; 3rd joint very small; 4th minute; 5—10 very similar to one another, each a little transverse. Head a good deal smaller than the thorax, pitchy yellow, quite shining, almost impunctate, the eyes rather large. Thorax a good deal narrower than the elytra, but strongly transverse, the sides and base distinctly rounded, the surface very shining, and with the discoidal punctures scarcely visible, the colour slightly paler than that of the head. Elytra a little longer than the thorax, very shining, almost similar in colour to the head, the basal portion being a little paler than the apical; they bear a few elevated punctures, which are most distinct on the sutural portion of their area. Hind body distinctly narrowed towards the extremity, obscure yellowish, with the penultimate segments darker, almost impunctate. Legs yellow.

In the male the hind margin of the dorsal plate of the 7th segment of the hind body is produced in the middle, so as to form an obtuse angle, and each outer angle possesses a moderately long incurved spine, which projects a little further backwards than does the central prominence.

Garrao; a single male found in fungus on the 11th of November, 1874, by Dr. Trail.

9. *Gyrophæna tridens*, n. sp. Nitidula, castaneo-testacea, elytrorum lateribus abdomineque ante apicem infuscatis; antennarum basi, pedibusque testaceis; prothorace transverso, disco quadripunctato; elytris parce punctatis. Long. corp. $\frac{7}{8}$ lin.

Antennæ only moderately stout, yellowish, with the four basal joints paler; 3rd joint small, much smaller than 2nd; 4th minute; 5—10 differing little from one another, each a little shorter than long. Head dark yellowish, rather small, almost impunctate. Thorax slightly narrower than the elytra, strongly transverse, much rounded at the base, and a little narrowed towards the front, shining, similar in colour to the head, with four punctures on the disc. Elytra a little longer than the thorax, infuscate-yellow, with the base paler, shining, sparingly and not very distinctly punctured. Hind body almost impunctate, yellowish, with the penultimate segments infuscate. Legs yellow.

In the male the hind margin of the dorsal plate of the

7th segment of the hind body forms a very acute tooth in the middle, and at each outer angle has a stout, elongate, pointed spine, which is distinctly curved inwards and projects much farther back than the central tooth.

Garrao; a single male found in fungus 11th November. 1874, by Dr. Trail.

10. *Gyrophæna boops*, n. sp. Rufo-testacea, nitida, capite, elytris (humeris exceptis) abdomineque ante apicem nigricantibus; oculis maximis; capite thoraceque fere impunctatis; elytris abdomineque parce punctatis, pubescentiâ sparsâ distinctâ. Long. corp. 1¼ lin.

Antennæ rather slender and moderately long, yellow; 3rd joint more slender and distinctly shorter than the 2nd; 4th joint only a little smaller than the 5th; 5—10 only differing slightly from one another in width and scarcely at all in length, the 5th about as long as broad, the 10th a little transverse; 11th moderately long, pointed. Head blackish, the eyes exceedingly large and convex, occupying the whole side of the head, coarsely facetted; the space between them is quite parallel-sided, shining, and almost impunctate. Thorax very strongly transverse, more than twice as broad as long, slightly narrowed behind, the base rounded: it is of a shining-yellowish colour, and is almost impunctate. Elytra a good deal longer than the thorax, shining, blackish, with the humeral angles yellow, with a very few, fine, setigerous punctures. Hind body yellow, with the penultimate segments blackish, the segments very finely and sparingly punctured, and also sparingly pubescent. Legs clear yellow.

In the male the elytra bear each near their hind margin two tubercles, one near each angle; the dorsal plate of the 6th segment of the hind body bears in the middle, at the base, an oblong, large, shallow impression; the hind margin of the following segment exhibits an obtuse, tubercle-like projection in the middle, and on each side a very short spine.

Rio Purus, 13th October, 1874; a fine series brought by Dr. Trail; also an individual from Ega found by Mr. Bates; and yet another, found at Garrao, on the 11th November, 1874, in fungus, by Dr. Trail.

*Obs.*—This species varies considerably in size, somewhat in colour and sculpture, and a good deal in the secondary sexual characters of the male: the individual

above described is one of the largest and most developed males; the thorax is sometimes infuscate, and even quite pitchy, and the dark colour in other cases reduces the pale colours to smaller areas. The tubercles on the elytra of the male seem in some cases nearly to disappear, and possibly in some individuals of that sex may be quite absent.

11. *Gyrophæna debilis*, n. sp. Rufo-testacea, nitida, parcissime punctulata, capite, elytris apicem versus, abdomineque ante apicem infuscatis; oculis maximis. Long. corp. $\frac{7}{8}$ lin.

The male of this species has a minute tubercle at the hinder and inner angle of each elytron; the dorsal plate of the 6th segment of the hind body has an indistinct impression on the middle of the basal portion; the hind margin of the following plate is narrow, and very nearly truncate; the middle being scarcely visibly prominent, and the outer angle on each side bearing only a very short, indistinct, obtuse projection.

Rio Purus, 13th October, 1874; a single male found by Dr. Trail, and a second individual found at Garrao, in fungus, on the 11th November, 1874.

*Obs.*—I am by no means sure that this individual may not ultimately be shown to be an extremely undeveloped male of the variable *G. boops*. It is, however, rather smaller than the smallest individual of that species, and the colours are paler than the palest thereof; the 4th joint of the antennæ appears to be smaller in proportion to the 5th, and the male peculiarities of the hind margin of the 7th segment are so reduced as to be almost absent. Should this insect ultimately be shown by a series of intermediate individuals to be a mere form of the *G. boops*, we shall then have demonstrated to us that the male secondary sexual characteristic in this species (as is known to be the case with many larger *Coleoptera* of different families) may be in some individuals almost entirely absent; and this will be all the more interesting, as in this case we shall see that this diminution of the male peculiarities extends even to those external parts that are in most immediate proximity to the primary sexual organs; for I have convinced myself, by numerous dissections of *Gyrophænæ*, that the ædeagus and its coverings have their chief attachment to the dorsal plate of the 7th segment of the hind body.

### Deinopsis.

Only five species of this extremely distinct and peculiar genus have yet been described, but they come from very different parts of the world, so that this genus is probably nearly universally distributed. No species has hitherto been made known from South America; but I have, besides the two species here described, one or two others from that quarter, so that it would seem probable the species will prove to be rather more numerous there than elsewhere.

1. *Deinopsis Matthewsi*, n. sp. Opacus, nigro-fuscus, dense subtilissime punctatus. Antennis, palpis pedibusque rufescentibus, antennis medio infuscatis. Long. corp. $2\frac{1}{2}$ lin.

Very similar in form to *D. fuscatus*, but larger, and with the antennæ more slender and elongate; they are rather less than $\frac{7}{8}$ lin. in length; 3rd joint a little shorter than 2nd, but a little longer than 4th; 5—9 very similar to one another in length; 10th a little shorter than 9th; 11th joint shorter than 10th, and terminated by a seta-like spine. The palpi and front of the head are obscure red. The margins of the thorax are also very obscurely red. The elytra are very deeply sinuate at their outer angle.

A single individual of this species was found by Mr. Bates, but I have no exact indication of its locality; the specimen is, I believe, a female.

I have named this species in honour of the Rev. A. Matthews, who has displayed a most extraordinary amount of entomological skill in his treatment of the *Trichopterygidæ*, and to whom this genus is of special interest, as he considers it to make a remarkable approach in many points, both of internal and external structure, to the *Trichopterygidæ*.

2. *Deinopsis longicornis*, n. sp. Ferrugineo-nigra, antennis, palpis pedibusque rufis; antennis tenuissimis, valde elongatis. Long. corp. (abdomine extenso) 3 lin.

Very similar in form to *D. fuscatus*, but much larger, and of a more rusty black colour. The antennæ are yellowish-red, very slender and elongate, being just over one line in length. The front of the head, the margins of the thorax, and the extremity of the hind body, are of an

obscure rusty colour. The sinuation at the extremity of the elytra is extremely deep.

Tapajos; a single female individual.

*Obs.*—Though very closely allied to the *D. Matthewsi*, I believe the elongate antennæ indicate this to be a distinct species; it is also a little larger, its head being notably broader.

## Coproporus.

Under this generic name I have described sixteen new species; all these would, in Erichson's classification, find their position in *Tachinus*, Family I. Kraatz and others have proposed more than one other generic name for insects that would by Erichson have been located as above mentioned; but these names I have not adopted, because I feel extremely doubtful as to what amount of generic differentiation will be found to exist among these insects; for it is evident that a vast number of closely-allied species exist in the warmer parts of the world, and that only an insignificant fraction of their number are as yet known to us; and I consider it is therefore premature to attempt to predict where the limits of aggregation of the species will ultimately be found. It is sufficient for my present purposes to state that all the *Tachyporini* here described as *Coproporus* are comparatively little elongate in form, have the anterior half of the body very shining and glabrous, the mesosternum carinate, and the front tarsi in the male scarcely dilated (this latter character being of course only inferred in the case of those species of which the female alone is known to me). *Tachyporini* possessing these characters appear to be very numerous in species in the warm parts of the world, and South America appears to be specially rich in them, so that their study will not be without difficulty, leaving out of consideration generic questions. In all the cases in which I have observed the ædeagus, it is but small, without appendages, and differs but slightly from species to species; on the other hand, the external sexual characters of the apical segments of the hind body offer remarkable and striking distinctions, so that their examination much facilitates the recognition of the species.

1. *Coproporus rotundatus*, n. sp. Convexus, piceus,

nitidus, antennis tenuioribus fuscis, basi pedibusque testaceis; capite prothoraceque lævissimis; elytris subtilissime punctulatis, lateribus leniter rotundatis, angulo externo rotundato; abdomine piceo-rufo. Long. corp. $2\frac{1}{2}$ lin. (abdomine extenso).

Very convex; of a pitchy colour. Antennæ with the three basal joints yellow, the rest infuscated; they are rather long and slender, a little incrassated towards the extremity; 3rd joint scarcely so long as the 2nd; 4th considerably shorter than the 3rd; 4—10 differing but little in length, but the apical ones evidently stouter than the others; 11th joint rather stout, longer than the 10th, its extremity paler. Head pitchy-black, the parts of the mouth and palpi yellowish. Thorax pitchy in colour, a little paler at the sides, very much narrowed to the front; the base distinctly sinuate on each side, and the posterior angles projecting backwards, their extremity rounded. Elytra longer than the thorax, but about as broad, their sides gently curved, evidently narrowed to their outer hind angle, which is broadly rounded, very finely and sparingly punctured. Hind body, when extended, very much narrowed to the extremity, pitchy in colour, its punctuation more distinct than that of the elytra. Legs yellowish.

In the male the dorsal plate of the 7th segment of the hind body ends in four spines, of which the two middle ones are closer to one another than to those at the sides, and are more slender and project farther backwards; the lateral notch on each side extends a good deal farther forwards than does the middle one; the ventral plate of the same segment bears at the extremity a deep and extremely broad triangular excision.

Ega; a single male.

2. *Coproporus similis*, n. sp. Convexus, piceus, nitidus, antennis pedibusque rufis, illis articulo ultimo dilutiore; capite thoraceque impunctatis; elytris subtilissime punctulatis, lateribus apicem versus leviter angustatis, angulo externo obtuso. Long. corp. $2\frac{1}{4}$ lin.

In the female the dorsal plate of the 7th segment of the hind body terminates in four elongate, almost equidistant spines, the two in the middle being distinctly more slender, but scarcely longer than the lateral; the ventral plate also ends in four spines, of which the two in the middle are rather stouter than the lateral, and

the interval between them is distinctly less than that between the middle and lateral ones.

Ega; a single female.

*Obs. I.*—This species so closely resembles *C. rotundatus*, that I at first supposed them to be the sexes of a single species; careful observation reveals, however, such important differences, that I have no doubt these are specific. *C. similis* is a little smaller; it has the antennæ considerably shorter, the eyes smaller and less prominent, the hinder angle of the elytra much less rounded, and the tarsi a good deal shorter.

*Obs. II.*—Besides the female individual above described and named, I have a male specimen from the same locality, which is slightly larger, and has the sides of the elytra a little more rounded, so that I am not quite sure whether it belongs to this species or not. I give, however, a description of its sexual characters as follows.

In the male the dorsal plate of the 7th segment of the hind body ends in four almost equidistant spines, the middle ones being much more elongate than the lateral ones; the three spaces between the spines extend about equally far towards the front; the ventral plate has at the extremity a broad notch, the sides of which are sinuate, and its hinder angles somewhat produced, in the form of short teeth.

3. *Coproporus obesus*, n. sp. Latior, convexus, piceo-niger, nitidus, antennis tenuioribus pedibusque testaceis; capite prothoraceque lævissimis, elytris parce subtilissime punctatis, angulo externo rotundato, intra marginem lateralem obsolete impresso. Long. corp. $2\frac{1}{2}$ lin. (abdomine extenso).

Very closely allied to *C. rotundatus;* a little broader and darker, the antennæ more slender at the extremity, and the sides of the elytra just a little turned outwards, so as to give them the appearance of being indistinctly impressed along the margin. Antennæ long and slender, slightly stouter at the extremity, yellowish, 2nd and 3rd joints differing little in length; after this the joints to the 10th differ but little in length, the 10th being stouter and a little shorter than the 4th; it is evidently longer than broad; 11th joint rather long. The head is blackish, smooth and shining, the parts of the mouth and the palpi yellowish. The thorax is very much narrowed to the front; it is pitchy

black, paler at the sides; it is broadly but slightly sinuate at the base on each side, the extreme hind angle just a little rounded. The elytra are the width of the thorax at the base, almost straight at the side, a little narrowed behind, the hind angle much rounded; they are sparingly and extremely finely punctured. The hind body is pitchy, with the last segment and the hind margins of those before it paler; its punctuation fine, closer and more distinct than that of the elytra. The legs dark yellowish.

In the female the dorsal plate of the 7th segment of the hind body terminates in four very long, equidistant, slender spines, of which the two middle ones are slightly more slender than the lateral ones; the ventral plate of the same segment also ends in four slender spines, of which the two in the middle are rather longer, but not stouter than the lateral ones.

Ega; two female specimens.

4. *Coproporus retrusus*, n. sp. Piceus, convexus, nitidus, antennis apicem versus incrassatis, pedibusque rufis; capite prothoraceque lævissimis, elytris parce subtilissime punctulatis, lateribus subparallelis, angulo externo minus fortiter rotundato. Long. corp. 2¼ lin.

This species is very closely allied to the three preceding ones, and is about the same size, but has the antennæ stouter and more thickened towards the extremity, and its elytra are straighter at the sides. Antennæ moderately long, rather stout, distinctly thickened towards the extremity, of an obscure reddish colour in the middle, with the three basal and the 11th joints paler; 3rd joint longer than the 2nd; 4th to 10th each a little shorter and broader than its predecessor, the 10th scarcely so long as it is broad; 11th joint stout, one and a half times as long as the 10th. Thorax as broad as the elytra, much narrowed to the front; a little sinuate at the base on each side, so that the hinder angles project a little backwards, the extremity of these rounded. Elytra rather straight at the sides, with the external angle moderately rounded, without any lateral impression; very finely and sparingly punctured. Legs dark yellowish.

In the female the ventral plate of the 7th segment of the hind body ends in four spines, of which the two middle ones are very elongate; the lateral ones are a good deal shorter than the middle ones, and but little stouter;

besides these the outer angle on each side is also produced, and forms a distinct short spine, so that the ventral plate is really six-spined, the outside tooth being only half the length of the one next it. The dorsal plate is four-spined, but, as the spines are broken in the individual described, I cannot speak of their relative lengths.

Ega; a single female.

5. *Coproporus curtus*, n. sp. Convexus, nigro-piceus, nitidus, prothoracis lateribus antennarumque medio piceo-rufis, his basi apiceque testaceis, pedibus rufis; antennis crassiusculis, articulis 6—10 leviter transversis. Long. corp. $1\frac{7}{8}$ lin.

Antennæ rather short and stout, the three basal joints yellow; 4—10 pitchy, 11th yellowish; 2nd and 3rd joints subequal in length; joints 4—10 differing but slightly from one another in length, each a little broader than its predecessor, the 4th rather longer than broad, the 10th not quite so long as broad; 11th obtusely pointed, much longer than 10th. Head blackish, impunctate, the palpi yellow. Thorax pitchy, with the sides paler, shining and impunctate, the base but little sinuate, so that the rounded hind angles are very little produced backwardly. Scutellum impunctate. Elytra rather broad and short, a good deal longer than the thorax, only a little curved at the sides, and with the hind angle only moderately rounded; they are very finely but yet distinctly punctured, and have a broad obsolete impression near the lateral margin. Hind body broad and short, pitchy, paler towards the extremity, rather closely and distinctly punctured, but little shining. Legs red.

In the female the dorsal plate of the 7th segment of the hind body ends in four long equidistant spines, of which the middle ones are a little the longer; the three notches between the spines extend about equally far forwards. The ventral plate ends in four long spines and two short lateral teeth; the two middle teeth project slightly farther back than those next them, and the notch separating them is narrower and does not extend quite so far forwards as the notch next them.

A single female, from Parentins to Jurua; 1st to 5th April, 1874; Dr. Trail.

6. *Coproporus politus*, n. sp. Convexus, pernitidus, niger, abdomine piceo, antennis medio piceis basi apiceque testaceis, mediocribus; prothorace basi fere truncato; elytris crebre punctulatis, lateribus minus rotundatis. Long. corp. $1\frac{3}{4}$ lin.

Antennæ not elongate, moderately stout, slightly thickened towards the extremity; the three basal joints and the apical one yellow, the middle ones pitchy; 3rd joint slender, quite equal in length to the 2nd; 4th—10th each very slightly shorter and very slightly broader than its predecessor, the 4th longer than broad, the 10th about as long as broad. Head impunctate, shining black; palpi yellow. Thorax with the base almost straight, and the hind angles not greatly rounded; it is very shining, quite without sculpture, blackish, with the sides paler. Elytra a good deal longer than the thorax, very finely but yet distinctly and rather closely punctured, the hind angle only a little rounded. Hind body paler and less shining than the front parts, rather finely and not densely punctured. Legs red. Mesothoracic carina extremely elevated, with its front angle rounded.

In the female the dorsal plate of the 7th segment ends in four spines, of which the middle ones are slightly longer than the lateral ones, and the middle notch is slightly broader than the outside one; the ventral plate ends in four spines, and a short lateral tooth on each side; the middle space between the teeth is a good deal narrower than the lateral one; the middle teeth are a little longer than the lateral ones.

Anana, 6th September, 1874; a single female, brought back by Dr. Trail.

7. *Coproporus brevis*, n. sp. Convexus, pernitidus, niger, abdomine piceo, antennis rufo-testaceis, pedibus rufis; prothorace basi fere truncato; elytris crebre punctulatis, lateribus sat rotundatis. Long. corp. $1\frac{3}{4}$ lin.

Antennæ yellowish, only moderately long, rather stout, distinctly thickened towards the apex; joints 2 and 3 differing but little in length; 4—10 differing little from one another in length, the 10th not quite so long as broad; 11th joint stout, a little paler than the others. Head black, shining, impunctate. Thorax as broad as the elytra, narrowed towards the front; the hinder angles

rounded; the base scarcely sinuate, smooth, shining and impunctate; the lateral margins pitchy. The elytra are nearly black, longer than the thorax, very finely punctured, without impression near the side; the hind angle a good deal rounded.

In the male the dorsal plate of the 7th segment ends in four almost equidistant spines, of which those in the middle are the more slender, and a good deal the longer; the ventral plate bears a deep angular notch, the sides of which are a good deal produced, so as to form projecting teeth.

Ega; two male specimens.

*Obs.*—This species appears to be extremely closely allied to *C. politus*, and has the mesothoracic carina similar, but the antennæ are entirely pale; I am sorry I am unable to compare the sexes of the two species.

8. *Coproporus ignavus*, n. sp. Sat convexus, nitidus, piceus, antennis basi rufo, articulo ultimo apice testaceo, pedibus rufis; prothorace basi utrinque leviter sinuato; elytrorum angulo externo sat rotundato. Long. corp. 2 lin.

Antennæ moderately long, rather slender, but a good deal thickened towards the extremity; the three basal joints yellow, the following ones pitchy, the extremity of the 11th yellow; 3rd joint fully as long as 2nd; 4th joint longer than broad; 10th very nearly as long as broad. Thorax very transverse, the hind angles a little rounded but not produced, the base a little sinuate on each side; it is of a pitchy colour, with the sides paler, almost impunctate. Elytra very finely and not closely punctured, not impressed at the sides, the hind angle moderately rounded. Hind body pitchy, paler towards the extremity, rather closely and distinctly punctured. Legs red.

In the female the dorsal plate of the 7th segment ends in four elongate spines; the middle ones are the more slender, they are a little longer than the lateral ones, and the space between them is not quite so broad as that between them and the side spine; the three spaces extend about equally far forward; the ventral plate ends in four spines about equally stout; those in the middle are distinctly longer than the side ones, and the space between them is scarcely so broad as that between them and the lateral spine; the middle space does not extend so far forward as

the lateral space; the outside of this plate is also a little produced, so as to form a short tooth.

Anana; a single female found on the 6th September, 1874, by Dr. Trail.

*Obs.*—This species appears to be almost intermediate between *C. similis* and *C. politus*; the less-produced hind angles of the thorax readily distinguish it from the former, while from the latter it is separated by the more rounded angles of the elytra and the sexual differences of the apical segment in the female. The mesothoracic carina has been smashed by an accident in the individual described.

9. *Coproporus inclusus*, n. sp. Convexus, nitidus, piceus, antennis pedibusque testaceis; capite thoraceque lævigatis; elytris obsolete punctatis, angulo externo obtuso; thorace basi subtruncato. Long. corp. $1\frac{1}{2}$ lin.

Antennæ yellowish, slender, rather short, a little thickened towards the apex; joints 1, 2, 3, differing but little from one another in length, 3rd the most slender; 4th much shorter than 3rd, a little longer than the 5th; 5—10 differing but little in length, each just a little shorter and a little broader than its predecessor, 10th scarcely so long as broad; 11th a little stouter than the 10th, and twice as long. Thorax ample, of a pitchy colour, very shining, transversely very convex, much narrowed towards the front; hinder angles rounded; the base slightly sinuate on each side near the outer angle. Elytra pitchy red, about one-third longer than the greatest length of the thorax; they are very finely and indistinctly punctured, and the outer angle is not greatly rounded. Hind body reddish. Legs yellow. Mesothoracic carina not much developed.

In the female the dorsal plate of the 7th segment ends in four spines, of which the middle ones are more slender and a little longer than the outer ones; the middle space is but little narrower than the lateral one, but does not extend so far towards the front; the ventral plate also ends in four spines, of which the middle ones are a good deal the longer; the lateral space is rather broader than the middle one, and extends more to the front; the outer angle of this plate is scarcely produced.

In the male the dorsal plate of the 7th segment ends in four short and approximate spines, of which the middle ones are longer than the lateral ones; the ventral plate of

the same segment bears a notch in the middle at the extremity, the hinder angles of which are acuminate, but not produced.

Ega; two individuals, ♂ and ♀.

*Obs.*—The above description is made from the female individual, the male specimen being greatly mutilated; I have some doubts indeed whether it is of the same species as the female, for it has the antennæ a little shorter, and the intermediate joints darker, than in the female described.

10. *Coproporus cognatus*, n. sp. Convexus, piceus, nitidus, antennarum basi, pedibusque rufis; capite thoraceque lævigatis, hoc basi fere truncato; elytris obsolete punctatis, angulo externo obtuso. Long. corp. 1½ lin.

Antennæ slender, moderately long; blackish, with the three basal joints yellowish, the apex of the 11th joint also paler; 3rd joint slightly shorter than 2nd; 4th longer than broad; 10th about as long as broad. Thorax with the base only slightly sinuate on each side, shining, impunctate. Elytra ample, obsoletely and sparingly punctured, with very fine strigosities connecting the punctures; their hind angle moderately distinct. Hind body greatly narrowed towards the extremity. Legs red. Mesothoracic carina only a little elevated.

In the male the dorsal plate of the 7th segment ends in four teeth, of which the middle ones project much farther back than the side ones; the teeth are but short and the lateral interval extends much more to the front than does the middle interval; the ventral plate bears a broad but not deep angular notch, the sides of which are only indistinctly sinuate, and its lateral extremities are not produced.

Ánana; a single male found by Dr. Trail on the 6th September, 1874.

*Obs.*—This species is very similar to *C. inclusus;* it is about the same size, but appears a little broader; the antennæ are darker in colour and more elongate. When both sexes of each species are known, I have no doubt good sexual distinctions will be found.

11. *Coproporus conformis*, n. sp. Sat convexus, nitidus, rufus, capite, prothoracis disco, antennisque piceis, his basi testaceo; elytris obsolete punctatis, lateribus haud impressis, angulo externo obtuso. Long. corp. 1½ lin.

Antennæ moderately long and slender, blackish in colour, with the three basal joints yellowish; 3rd joint nearly equal to 2nd in length, 4th slender; 4—10 each slightly shorter and broader than its predecessor, so that the 10th is a little transverse; 11th rather long. Head pitchy, shining and impunctate; palpi yellow. Thorax with the hind angles only moderately rounded; the base slightly sinuate on each side, shining and impunctate, reddish with the disc broadly pitchy. Elytra dark reddish, ample, very finely punctured and reticulated, the hind angle not much rounded. Legs slender, red. Mesosternal carina only a little elevated.

In the male the dorsal plate of the 7th segment ends in four rather broad sharp teeth, of which the middle ones project much farther backwards than the side ones; the space separating the middle teeth is not broad, and does not extend far forwards; the base of the lateral notch is much nearer to the front. The ventral plate bears a large deep notch, the sides of which are a little sinuate, and the lateral angles acuminate and a little produced.

A single male was taken by Dr. Trail on the 5th November, 1874, but I have no record of the exact locality.

*Obs.*—Though extremely similar to *C. cognatus*, I believe this will prove to be a distinct species; it is slightly narrower, and not quite so convex; the hind angle of the elytron is a little less rounded, and the spines on the 7th segment in the male are a little longer, and the notch on the ventral plate is a little deeper.

12. *Coproporus rufescens*, n. sp. Rufo-testaceus, nitidus, glaber, transversim sat convexus, elytris marginem lateralem versus late profundeque impressis, angulo externo minus rotundato. Long. corp. $1\frac{1}{3}$ lin.

Entirely of a reddish colour and impunctate, except that on the elytra are traces of a sparing and very obsolete punctuation. Antennæ a little thickened towards the apex; 3rd joint small; 4—10 differ but little in length, each just a little broader than its predecessor, 10th scarcely so long as broad; 11th nearly twice as long as the 10th. Thorax ample, as broad as the elytra, narrowed to the front, the hind angles rather obtuse and a little rounded; the base nearly truncate, being very little produced near the external angles. Elytra one-third longer

than the thorax; close to the outside margin they have a broad, deep impression, commencing a little behind the humeral angle but continued close to the outer angle, which is but little rounded. Hind body short, furnished with exserted black setæ. Legs concolorous. Mesothoracic carina but little elevated.

In the female the dorsal plate of the 8th segment of the hind body terminates in four acute teeth of nearly equal length, the three notches between which are very similar to one another in breadth and depth. The ventral plate of the same segment terminates in four teeth, shorter than those of the dorsal plate; the middle notch between these is much shorter than the lateral ones, and is, in fact, nearly filled up, but is continued forwards as a groove or longitudinal impression.

Ega; two specimens, ♀.

*Obs.*—I have not been able to restore the hind body to its natural elongation in this species, so that the length mentioned for the species is only an estimate.

13. *Coproporus tinctus*, n. sp. Convexus, nitidus, testaceus, antennis ante apicem elytrisque basi fuscis; elytris evidenter punctulatis, intra marginem lateralem latius impressis, angulo externo obtuso. Long. corp. $1\frac{1}{3}$ lin.

Antennæ rather slender, only moderately long, a little thickened towards the extremity; the three basal joints yellow, the following ones infuscate; the apical one again a little paler; 3rd joint about as long as 2nd; 4th slender, a good deal longer than broad; 10th a little transverse. Head yellow, impunctate. Thorax very slightly sinuate at the base on each side; the hind angles not much rounded, yellow, very shining, quite impunctate. Elytra yellow, but with the basal portion largely infuscate; they are distinctly punctured on the basal portion, but towards the apex the punctuation becomes quite obsolete; they have a large, distinct impression near to the lateral margin, and the hind angle is but little rounded. Hind body indistinctly and not closely punctured. Mesosternal carina low.

In the female the dorsal plate of the 7th segment of the hind body terminates in four moderately long teeth; the middle ones project a little farther back than the lateral ones, and are rather the more slender; the middle notch does not extend quite so far forward as the lateral ones,

the ventral plate of the same segment ends in four shorter teeth; the middle ones are stout, the lateral ones not quite so stout and not projecting quite so far back as the middle ones; the middle notch is not deep, and does not extend nearly so far forward as the lateral one. In the male the ventral plate of the 7th segment ends in four very short, stout teeth; the middle ones project much farther back than the lateral ones, which are very short; the middle notch is angular and small; the ventral plate bears a broad, not very deep, angular notch at the extremity.

Rio Purus, 13th October, 1874; two individuals (♂ and ♀). Dr. Trail.

*Obs.*—The male specimen is quite immature, and has no dark colour on the elytra, but I have no doubt whatever but that it is of the same species as the female described.

14. *Coproporus distans*, n. sp. Sat convexus, niger, nitidus, antennarum basi, pedibus, elytrorumque apice testaceis, prothoracis marginibus dilutioribus; antice impunctatus, abdomine omnium subtilissime, dense punctulato, opaco. Long. corp. 1 lin.

Antennæ moderately long, blackish, with the four or five basal joints yellow; of joints 4—10 each is distinctly shorter and very slightly broader than its predecessor, the 4th a good deal longer than broad, the penultimate joints transverse; the 11th short and stout. Head black, shining and impunctate. Thorax blackish, with the margins paler and translucent, the base not at all sinuate, the hind angles not much rounded. Elytra blackish, with the extremity broadly yellowish, shining and impunctate; they are not very convex, but the lateral margin is somewhat explanate and very distinct, the hind angle much rounded. The hind body is blackish, and is very densely and finely punctured, and with an extremely short, fine and delicate pubescence. The legs are yellow. The mesosternal carina very fine and slightly elevated.

In the male the dorsal plate of the 7th segment has in the middle two extremely short teeth, separated by a broad, very shallow notch; the sides of the plate are scarcely prominent; the ventral plate bears a broad, shallow notch at the extremity.

Rio Purus, 25th October, 1874; two individuals found by Dr. Trail, one of which, however, has lost the hind body.

15. *Coproporus duplex*, n. sp. Subdepressus, nitidus, piceus, antennarum basi, pedibus, prothoracis maginibus, elytrisque apicem versus testaceis; antice impunctatus, abdomine crebre subtiliter punctulato. Long. corp. $1\frac{1}{2}$ lin.

Antennæ elongate, slender at the base, distinctly thicker at the extremity; the three basal joints yellow, the rest blackish; 3rd joint a little shorter than 2nd; 4th joint slender; 10th about as long as broad. Head rather small, shining and impunctate, blackish. Thorax very slightly sinuate at the base on each side; the hind angles moderately rounded, the sides and base yellowish, the front portion darker in colour; the surface is shining and impunctate. Scutellum large, impunctate. Elytra but little convex transversely, shining and impunctate, pitchy yellow, the base darker than the apex; the lateral margins explanate; the hind angle a good deal rounded. Hind body slender in proportion to the front parts, blackish, finely, evenly and rather closely punctured. Legs yellow; tibiæ very slender; the tarsi elongate and extremely slender. The mesosternal carina not much elevated, but with the anterior part more elevated than the hinder part, so that an acute projection is formed on its middle.

In the male the dorsal plate of the 7th segment of the hind body ends in the middle in two short, stout, acuminate teeth, and in a scarcely prominent lateral one on each side; the ventral plate bears a deep, angular excision, the sides of which are a little curved.

Conceicão, Rio Mauhes; a single male, captured by Dr. Trail, May, 1874.

16. *Coproporus scutellatus*, n. sp. Subdepressus, nigropiceus, nitidus, antennis pedibusque testaceis, capite prothoraceque vix visibiliter, elytris subtiliter, abdomine evidentius punctatis; elytris secundum marginem lateralem canaliculatis. Long. corp. $1\frac{1}{3}$ lin.

This species differs from the others of the genus here described by its much flatter and more Tachinoid form, and its hind body is evidently less retractile. It appears to be closely allied to *T. brevicollis*, Er. The antennæ are yellowish, they are of a moderate length and stoutness, a little thickened to the apex; 2nd and 3rd joints nearly equal in length; 4—10 differing but little from one another, the 4th considerably stouter than the third;

the 11th joint large, stouter than the 10th, and about twice as long. Head broad and short, black and shining, extremely finely, almost imperceptibly, punctured. Thorax pitchy, paler at the sides, narrowed towards the front, the base slightly sinuate on each side, the hind angles rounded and projecting a little backwards; it is very finely and indistinctly punctured. Scutellum large, smooth and impunctate. Elytra fully a third longer than the thorax, straight at the sides, the outer angle not much rounded; they have a deep, narrow channel close to the external margin, extending from just below the humeral angle to the extremity; they are finely punctured, but more distinctly so than the thorax. Hind body rather closely and distinctly punctured; segments 2—5 distinctly margined, 6th and 7th immarginate. Legs yellowish, short; mesothoracic carina but little prominent.

In the female the dorsal plate of the 7th segment ends in four stout but long acuminate spines; these project about equally far back; the notches between them are only narrow, but are elongate; the lateral ones reach a little farther forwards than the middle one; the ventral plate ends in four shorter and more widely-separated spines; of the notches between these the middle one is not deep, but the lateral notches extend considerably farther forwards than the middle one.

Ega; a single individual.

## Conurus.

The *Tachyporini* bearing this name are very easily recognized from the fine, delicate pubescence with which all the parts of the body are clothed. Species of the genus are probably to be found in nearly all countries, and, though only five species have yet been described from South America, there is but little doubt that these insects will be found to be numerous there, for I have nine species from the neighbourhood of Rio de Janeiro alone in my collection.

1. *Conurus latus*, n. sp. Ferrugineus, convexus, pubescens, antennis articulis 5—10 nigris, ultimo pallido basi nigro. Long. corp. $2\frac{1}{2}$ lin.

A broad species, very convex about the thorax and elytra, with the exception of the antennæ of an uniform tawny colour. The antennæ moderately long, thickened

towards the extremity; the four basal joints yellowish, the six following joints and the base of the 11th blackish, the rest of the last joint quite pale. Head small, narrower than in *C. pubescens*. Thorax ample and very convex, the sides much narrowed towards the front, the front margin very distinctly bisinuate; the hind angles are obtuse and rounded, the punctuation and pubescence very fine. Elytra about as long as the thorax, their punctuation and pubescence fine but not dense. The hind body is densely and distinctly punctured; its well-marked pubescence is of a golden colour.

The male has a large angular notch at the hind part of the ventral plate of the 7th segment of the hind body; the hind margin of the dorsal plate is simple.

In the female the dorsal plate of this segment is divided at the extremity by three narrow elongate incisions into four approximate processes, while the hind margin of the ventral plate is furnished with long cilia.

In each sex the front tarsi are rather strongly dilated.

Ega; two individuals.

2. *Conurus setosus*, n. sp. Angustulus, cinnamomeus, subtilissime punctulatus et pubescens, abdomine longius nigro-setosus; antennis gracilibus, basi apiceque pallidioribus; prothorace elongato. Long. corp. $1\frac{2}{3}$ lin.

Antennæ slender and elongate, pale yellow, a little darker in the middle; 3rd joint about equal in length to 2nd; 4th slender and elongate; 5—10 each a little broader and shorter than its predecessor, 10th slightly longer than broad; 11th rather elongate, nearly twice as long as 10th. Thorax longer than broad, nearly straight at the base, the hind angles almost rectangular, but a little rounded, the sides curved and a little narrowed towards the front, the surface very finely and indistinctly punctured. Elytra hardly so long as the thorax, similarly but a little more distinctly punctured. Hind body slender, very finely punctured, furnished with remarkably evident long black setæ. Legs pale yellow; tarsi elongate and very slender.

Garrao; a single individual found in fungus by Dr. Trail, 11th November, 1874.

*Obs.*—This individual is, I have no doubt, a male, as it has the front tarsi slightly dilated. The elongate black setæ with which the very slender extremity of the hind body is armed do not allow me to see with certainty the

structure of the apical segments; but any peculiarities, if existent, must be very slight.

### Tanygnathus.

Of this genus eight species are all that have as yet been described, viz., four from the Old World tropics, two from the New World tropics, one from temperate Europe, and one from the Atlantic Islands. I here add three new species to this number, and can state, moreover, that the genus will be found ultimately rather rich in species, as I have a number of other undescribed ones in my collection, one of which is from Southern Australia, and several from Brazil.

The genus is one of very considerable interest; for it was assigned by Erichson to the *Tachyporini*, by Kraatz to the *Quediini*, and yet possesses certain points foreign to both these groups, which appear to me to indicate a third relationship with the *Aleocharini*. A careful examination of the structural characters of the species seems to me indeed to be urgently needed before its nearest relationship can be satisfactorily decided.

1. *Tanygnathus longicornis*, n. sp. Rufescens, antennis elongatis, apicem versus pallidis, elytris piceis; abdomine fortiter fere irregulariter punctato, longius pubescente. Long. corp. $2\frac{1}{2}$ lin.

Antennæ very slender and elongate, not in the least thickened towards the extremity; the basal joint yellowish; the next five or six darker, and the rest again paler. Head obscure reddish, very narrow and elongate, smooth and shining. Thorax obscure reddish, narrowed to the front, not quite so long as broad, with four very fine punctures placed as usual in this genus. Elytra darker in colour than the head and thorax, scarcely so long as the latter, closely and very finely punctured. Hind body reddish, with faint iridescent reflections; the base of each segment finely punctured; the other part of each segment with sparing, rather large elevated points; its pubescence rather long, and much mixed with black erect setæ. Legs reddish.

One specimen; the only locality indicated being "Amazons."

2. *Tanygnathus nasutus*, n. sp. Fusco-rufus, antennis

sat tenuibus, medio fuscis, basi apiceque rufo-testaceis; thorace læte rufo; elytris fuscis, margine apicali rufo; abdomine dense subtiliter punctato, opaco; pedibus rufis. Long. corp. $2\frac{1}{2}$ lin.

Antennæ moderately long, and not very slender; the basal joint yellow; joints 2—7 infuscate, 8—11 yellow. Head obscure reddish; the clypeus in front acuminate. Thorax very shining bright red. Scutellum reddish. Elytra of a smoky colour, with the hind margin reddish, closely and finely punctured. Hind body very obscure reddish; the base rather darker than the extremity, very closely and densely punctured, and very pubescent, so as to be quite dull. Legs reddish-yellow, underside dull obscure red.

A single individual, without special locality.

*Obs.*—This species is about the size of the European *T. terminalis;* the antennæ are of about the same length but distinctly stouter; the front part of the clypeus is more prolonged, and the punctuation of the hind body is much denser. It greatly resembles *T. flavicollis*, but has the antennæ stouter, the clypeus more prolonged in front, and the hind body more densely punctured.

3. *Tanygnathus flavicollis*, n. sp. Rufescens, capite piceo, antennis apice thoraceque flavis, elytris piceo-rufis. Long. corp. $1\frac{2}{3}$ lin.

Closely allied to *T. ruficollis*, Kr., and about the size of that species. Antennæ slender, rather long; the 1st joint yellowish, the next five darker, the rest paler again. Head pitchy. Thorax bright reddish-yellow, rather broad, of the usual form in this genus, and with the four ordinary punctures. Elytra pitchy; the suture yellowish at the extremity, about the length of the thorax, closely and finely punctured. Hind body dark reddish, rather closely and finely punctured, and distinctly pubescent. Legs reddish-yellow.

Tapajos; one specimen, in bad condition.

## Acylophorus.

Up to the present time sixteen species appear to have been described of this genus; they are from widely different parts of the globe; and the species in my collection enable me to state that the genus is probably to be found

in all the warm and temperate parts of the earth's surface; while in Australia there are to be found some very interesting forms, apparently intermediate between this genus and *Quedius*.

The four species here described belong, I think, clearly to the same genus as our European species; at any rate, their facies is so similar to that of our European species that any one acquainted with these would at first sight declare the Amazonian species to be congeneric therewith. I have several allied species from Brazil in my collection, so that the genus will probably prove to be quite as rich in species in South America as in any other part of the world.

1. *Acylophorus punctiventris*, n. sp. Niger, antennarum basi, pedibusque obscure testaceis; elytris fortius punctatis; abdomine subtiliter iridescente, segmento sexto apice extremo, 7° basi apiceque testaceis, segmentis singulis basi crebre subtiliter, apicem versus fortiter parciusque punctatis pubescentibusque. Long. corp. 5 lin.

Considerably larger than *A. glabricollis*. The antennæ are elongate and slender, with only the two or three apical joints a little stouter. The 1st joint dusky yellowish, very long, about as long as the five following; the 2nd and 3rd joints about equal in length; 4th joint considerably shorter than the 3rd and a little shorter than the 5th; from the 5th to the 9th each a little shorter than its predecessor, all of these joints elongate; 10th joint much shorter, but as long as broad; last joint rounded, nearly as long as the 10th. Palpi yellowish; mandibles elongate, slender, crossed, dull yellowish. Head broadly ovate, with three punctures between the eyes, the middle one the most forward. Thorax black and shining, rather broad, about as long as broad, with the usual four punctures. Elytra black, scarcely so long as the thorax, with the scutellum coarsely, moderately closely punctured. Hind body elongate, a little iridescent, with a very rigid pubescence; each segment at the extreme base closely and finely punctured, the rest of each sparingly and rather coarsely punctured; segments 2—5 with the hind margin furnished with a row of very coarse setæ projecting backwards; the extreme margin of the 6th segment, the base and apex of the 7th, reddish. Legs reddish, a little infuscate.

Ega, one; Tapajos, two individuals.

2. *Acylophorus angusticeps*, n. sp. Niger, nitidus, tarsis fulvis, elytris sat crebre fortiterque punctatis; capite angusto. Long. corp. 4½ lin.

Closely allied to *A. glabricollis*, rather larger, the head narrower; the antennæ (the basal joints at any rate) longer; and the 6th and 7th segments of the hind body entirely black. The antennæ are destroyed with the exception of the first four joints; these are longer than in *glabricollis*, blackish, with the extreme base of the 1st joint a little yellowish; 3rd joint not quite so long as the 2nd, a little longer than the 4th. Palpi pitchy. Head elongate and very narrow, with the usual six larger punctures, the two forming the obliquely placed pair (near the neck on each side) very close together. Thorax as in *glabricollis*. Scutellum broader than in *glabricollis*, strongly punctured. Elytra scarcely so long as the thorax, their punctuation as in *glabricollis*. Hind body much narrowed to the extremity, black, the apex of the 6th segment concolorous; each segment is, at the extreme base, closely and strongly punctured, the hinder part of each much more sparingly. Legs pitchy black; tarsi dark reddish.

Tapajos; one specimen.

3. *Acylophorus acuminatus*, n. sp. Niger, nitidus, antennarum basi, pedibusque testaceis, elytris sat crebre fortiterque punctatis. Long. corp. 3 lin.

Much smaller and narrower than *A. glabricollis*. Antennæ with the basal half of the 1st joint yellowish, the rest pitchy; 2nd joint much longer than the 3rd, 4th shorter than the 3rd, 5th longer than 4th; from this to the 10th each a little shorter and stouter than its predecessor, 10th distinctly transverse; last joint stout and rounded at the extremity, a little longer than the 10th. Head suborbiculate, being comparatively both shorter and broader than in *glabricollis*, with the usual punctures. Thorax pitchy, rather broad but of the usual form. Elytra scarcely so long as the thorax, black, together with the scutellum rather closely, moderately coarsely punctured. Hind body very pointed at the extremity; the segments at the base and sides of each closely and not coarsely punctured. Legs yellow.

Ega; three specimens.

4. *Acylophorus iridescens*, n. sp. Picco-rufus, antennis capiteque piceis, illarum summo basi, pedibusque testaceis; abdomine fortiter punctato, iridescente; elytris crebre, subtiliter punctatis. Long. corp. $2\frac{1}{2}$ lin.

Much smaller than *A. glabricollis*, and very different in colour. Antennæ pitchy; the basal portion of the 1st joint yellowish; they are moderately long, scarcely thickened towards the extremity; 3rd joint much shorter than the 2nd, longer than the 4th; 5th again longer than the 4th; up to the 9th each joint longer than broad; 10th and 11th joints rather stout, each about as long as broad. Palpi yellowish. Head pitchy black, suborbiculate. Thorax pitchy, a little narrowed to the front. Elytra reddish or pitchy red, scarcely so long as the thorax; together with the scutellum finely and rather closely punctured. Hind body reddish, with iridescent tints, roughly and strongly punctured, the points appearing elevated, its pubescence coarse. Legs yellow.

Tapajos; one specimen.

## Quedius.

Of this extensive and widely distributed genus it is remarkable that I have received but a single species from the Amazons, and I have only a few others from South America in my collection: as only about five species have been described from tropical America, it seems probable that the species are not numerous there.

1. *Quedius clypealis*, n. sp. Nitidus, rufo-testaceus, capite pectoreque piceis, illo antice rufo, abdomine irides-centi-nigro, parce punctato basi lævi, apice testaceo; elytris fere lævigatis, punctis paucis subseriatis impressis. Long corp. 4 lin.

Antennæ short and rather stout, clear yellow; 3rd joint longer than 2nd; 4—10 each a little shorter and broader than its predecessor, the penultimate joints rather strongly transverse, and with their upper and inner angle a little produced, so as to be subserrate. Palpi yellow. Head a good deal smaller than the thorax, rather short and broad; the eyes very large, and occupying very nearly the whole side of the head, shining, blackish, with the front part broadly yellow, impunctate, except for two or three punctures at the margin of the eye. Thorax curved at the sides and a little narrowed in front, about as long as

broad, shining reddish-yellow, impunctate, except for some punctures along the margins. Scutellum large, shining red, impunctate. Elytra as long as the thorax, shining red, with two or three not very distinct punctures along the suture, with two other punctures near these, with a discoidal series of four or five punctures, and with a few lateral punctures. Hind body blackish, with iridescent metallic reflection, the hind part of the 6th and all the following segment yellow, the lateral styles of the terminal segment black. Legs reddish-yellow, stout.

In the male the ventral plate of the 7th segment of the hind body has a shallow emargination in the middle of the hind margin.

Ega.

*Obs. I.*—I have before me eight specimens, which I believe to be conspecific, and one of which I have described as above. Three of these individuals are males, and agree closely with one another, except that in one of them the breast is red. The five females differ from the males, inasmuch as they have the elytra and thorax black, and the legs more or less infuscate; whether these differences in colour will prove to be sexual, I am unable to say.

*Obs. II.*—This species is, to judge from Erichson's description of *Q. labiatus*, very closely allied thereto, and I had at first considered it a variety thereof, but on careful examination I think it will more probably prove to be a distinct species.

### Cordylaspis.

This genus was proposed by Nordman for a most remarkable insect, and it has hitherto remained without any known near allies; the extremely rare *Scariphœus luridipennis* connects it unmistakably with *Hæmatodes*, and I have one or two other undescribed allies in my collection. The only species yet distinguished is,—

1. *Staphylinus pilosus*, Fab.

Found by Mr. Bates at Pará, Tapajos and St. Paulo.

### Platyprosopus.

This genus up to the present time consists of nine or ten described species found in the warm portions of the Old World. I here add another ten species from the Amazons, and consider that they form a most unexpected addition to the South American fauna; except these

Amazonian specimens, I have never seen another individual of the genus from the New World.

These new species appear to exhibit the peculiar characteristics of the genus very highly developed. The structure of the front of the head and the insertion of the antennæ approaches in these species even more to what exists in the *Xantholini* than it does in the Old World *Platyprosopi;* the antennæ are even more approximate in their insertion than in the Old World species, and moreover the part of the head to which they are attached is more prominent, and is a little emarginate on each side of the middle, so that the front of the head and the attachment of the labrum have very much the appearance presented by the same parts in the *Xantholini*.

The genus is one of the most interesting of the *Staphylinidæ;* it is located by Erichson and Kraatz as a peculiar member of the *Xantholini*, but I cannot consider that this is a correct mode of treating it. The points of structure I have already alluded to, viz., the antennal insertion and the attachment of the labrum, are almost the only points the genus has in common with the *Xantholini*, while it wants some of the most important points of structure of that group, and in certain respects approaches to the *Quediini* and even to the *Pinophilini*. As the group *Xantholini* appears to me one of the most specialized portions of the *Staphylinidæ*, and as *Platyprosopus* is pretty clearly of a synthetic or little specialized character, it seems to me that it will be very much more suggestive of the truth if the genus be considered to form of itself a group, to be located in the neighbourhood of the *Quediini;* for I cannot but think that the purposes of inquiry are very much better served by the establishment of a considerable number of provisional groups, than by slumping together (if I may use such a term) under one name a number of heterogeneous forms, having probably very different genetic histories.

1. *Platyprosopus major*, n. sp. Parallelus, nigropiceus, capite subopaco, dense punctato, medio spatio angusto lævi, nitido; thorace parce punctato, nitido, marginibus lateralibus dense fortiter punctatis; elytris abdomineque dense subtiliter punctatis, opacis, fusco-pubescentibus; pedibus fuscis. Long. corp. extens. 10—12 lin.

Antennæ pitchy, stout, about as long as the head and half the thorax; 3rd joint longer than 2nd; 4—10 differ-

ing little from one another, each a little shorter than broad; last joint longer than the 10th, obtusely pointed on one side. Head large, quite as broad as the thorax, above densely and coarsely punctured, a space along the middle free from the coarse punctures, but with a few fine and indistinct ones; besides this there are three or four still larger punctures on each side mixed with the others, and in front of the middle there is a transverse impunctate space; on the underside it is extremely dull, densely and finely rugulose-punctate. Thorax as broad as the elytra, as long as broad, black, very shining, with fine punctures scattered over it, with a dorsal series of six punctures on each side the middle, with seven or eight other punctures on each side near the front part, and just inside the lateral margins, with a narrow strip of coarse dense punctuation extending also some way along the front and hind margins. Elytra scarcely longer than the thorax, densely and finely punctured, nearly opaque, and with a very fine fuscous pubescence. Hind body opaque, densely and finely punctured, the apical segments more coarsely than the others. Legs dusky reddish, very pubescent.

Ega; two specimens, ♂ and ♀.

*Obs.*—Besides these two individuals, there is another ♂ specimen from Pebas, which differs in several slight particulars and may possibly be a distinct species, but more probably is only a local form of *P. major*.

2. *Platyprosopus laticeps*, n. sp. Nigro-fuscus, capite prothoraceque disperse punctatis, nitidis, elytris abdomineque dense subtiliter punctulatis, fusco-pubescentibus, opacis; pedibus obscure rufis. Long. corp. 7—8 lin.

Much smaller than *P. major*, and without the marginal punctuation of the thorax. The antennæ are moderately stout, and reach about half-way to the back of the thorax; they are of an obscure dull-reddish colour; the 3rd joint much longer than the 2nd; 4—10 differing but little from one another, the 10th about as long as broad. The head is quite as broad as the thorax; above it is coarsely, irregularly and rather sparingly punctured, the punctures less numerous about the middle than at the sides; scattered with the coarser punctures are numerous very fine ones; on the underside it is quite dull, densely and finely rugulose-punctate, and with a fine fuscous pubescence.

Thorax quite as broad as the elytra, slightly longer than broad, on each side the middle with an irregular and not very distinct dorsal row of six or seven punctures, and between this and the sides with numerous other coarse punctures, from which, however, the hinder part is free; besides these it is covered with numerous other very fine and distant punctures. The elytra are about as long as the thorax, dull, densely and finely punctured, and with a very fine pubescence. The hind body is pitchy, with the extremity as well as the hind margin of each segment ferruginous; it is densely punctured, and with a fine fuscous pubescence. The legs are dull yellowish, very pubescent.

Ega; three specimens.

3. *Platyprosopus parallelus*, n. sp. Angustus, piceo-ferrugineus, antennis pedibusque obscure rufis, abdomine segmentorum marginibus, anoque ferrugineis; capite prothoraceque disperse punctatis, nitidis; elytris abdomineque opacis, dense punctatis, fusco-pubescentibus. Long. corp. 6 lin.

Closely allied to *P. laticeps*, smaller and narrower. The antennæ are moderately stout, and reach about half-way to the back of the thorax; joint 3 much longer than 2; 4—10 differing but little from one another, each about as long as broad. Head slightly narrower than the thorax, of a pitchy colour, with two kinds of punctuation on the upper surface, viz., a fine punctuation visible on the middle as well as elsewhere, and some other larger and scattered punctures wanting on the middle part. Thorax as broad as the elytra, of a pitchy colour, about as long as broad, on each side of the middle with an irregular and indistinct row of six or seven punctures, and between this and the sides with some other punctures, wanting towards the base; besides this numerous extremely fine and small punctures are scattered on the upper surface. Elytra about as long as the thorax, of a pitchy colour, quite dull, densely and finely punctured, and with a very fine fuscous pubescence. Hind body quite dull, pitchy, the extremity and the hind margin of each segment dull reddish, extremely finely and densely punctured, and with a very fine pubescence. Legs yellowish, very pubescent.

Ega; one specimen.

4. *Platyprosopus puncticeps*, n. sp. Angustus, piceus,

thorace magis rufo, elytris, abdomine segmentorum marginibus anoque ferrugineis, antennis pedibusque testaceis; capite supra crebre fortiter punctato, nitido, vertice medio impunctato. Long. corp. 4¼ lin.

Antennæ rather slender, a little shorter than head and thorax, dull yellow; 3rd joint one and a half times the length of the 2nd; 4—10 each just a little shorter and stouter than the preceding one, 4th longer than broad, 10th about as long as broad. Head pitchy, above coarsely and rather closely punctured, the punctures closest about the hind angles and front part, the middle of the vertex free, but with a few very fine and obsolete punctures; beneath it is very opaque, from its very fine and dense rugulose punctuation. Thorax pitchy red, very shining, about as long as broad, sparingly punctured, the punctures consisting of a row of five or six on each side the middle, and fifteen or twenty others on each side of these towards the front part. Elytra quite as long as the thorax, dull red, closely and finely punctured. Hind body of a pitchy colour, the extremity and margins of the segments reddish; it is very finely punctured, and with a very dense fine pubescence. Legs yellow.

Tapajos; two specimens.

5. *Platyprosopus rectus*, n. sp. Angustus, parallelus, rufescens, capite piceo-rufo, crebre fortiter punctato, nitido; pedibus testaceis; thorace nitido, medio utrinque parce seriatim punctato, et versus latera anterius punctis nonnullis; elytris abdomineque dense subtiliter punctatis, opacis. Long. corp. extens. 4¼ lin.; lat. ⅝ lin.

Very narrow and parallel. Antennæ rather slender, 1 lin. in length; red. Head rather darker than the other parts, narrow, coarsely punctured, the punctures wanting on a space down the middle except at the anterior parts. Thorax longer than broad, straight at the sides, just as broad as the elytra; reddish, shining, bearing only a few punctures, viz., a series of about four large punctures on each side of the middle, and a few other large punctures between these and the outside towards the front. Elytra scarcely longer than the thorax, of an obscure reddish colour, densely and finely punctured and densely pubescent. Hind body rufo-fuscous, densely and finely punctured and densely pubescent. Legs yellow; underside of head very densely sculptured and opaque.

A single female of this species was brought back by Dr. Trail; it was attracted by light at Manaos, in August, 1874.

*Obs.*—This species is extremely closely allied to *P. puncticeps*, but is a little smaller, is narrower and more parallel; the elytra and hind body are a little more closely and finely punctured, while the punctures on the head and thorax are slightly coarser than in the larger species.

6. *Platyprosopus minor*, n. sp. Angustus, obscure rufus, antennis pedibusque testaceis; capite dense subtiliter punctato pubescenteque, subopaco; thorace subnitido, crebre sat fortiter punctato, elytris abdomineque opacis, dense subtiliter punctulatis, fusco-pubescentibus. Long. corp. 4 lin.

Antennæ yellow, not stout, not reaching quite to the back of the thorax; 3rd joint longer than 2nd; 4—10 each just a little shorter and stouter than the preceding one, the 10th about as long as broad. Head dull reddish, finely and densely punctured; the middle of the vertex almost free from punctures; the sides behind the eyes especially densely and finely punctured and pubescent. Thorax rather longer than broad, red, moderately closely but not coarsely punctured, a middle longitudinal line impunctate. Elytra about as long as the thorax, opaque red, densely and obsoletely punctured, and very finely pubescent. Hind body pitchy red; the hind part and the extremities of the segments paler, very dull, very densely and finely punctured, and with a dense fine pubescence. Legs yellow.

Ega; one specimen.

7. *Platyprosopus rufescens*, n. sp. Obscure rufo, abdomine piceo, segmentorum marginibus anoque rufescentibus, antennis pedibusque testaceis; capite dense subtiliter (medio parcius) punctato, pubescenteque, subopaco; prothorace parcius disperse punctato, nitido. Long. corp. 5 lin.

Allied to *P. minor*, but larger and with the thorax more sparingly punctured.

Antennæ rather slender, not so long as head and thorax, dull yellow; 3rd joint much longer than 2nd; 4—10 each a little shorter than the preceding one, 4th much longer than broad, 10th about as long as broad. Head very nearly as broad as the thorax, the sides very densely and

finely punctured and pubescent, the middle parts much more sparingly so; the underside quite dull and finely pubescent; it is of a pitchy or pitchy-red colour. Thorax as broad as the elytra, rather longer than broad, of a dark-reddish colour; a space along the middle, and another of about equal width at the base, free from punctures; the other parts rather sparingly and irregularly punctured. Elytra about as long as the thorax, reddish, very densely and finely punctured, with a dense very fine fuscous pubescence. Hind body pitchy; the extremity and the margins of the segments reddish, very densely and finely punctured and densely pubescent. Legs yellow.

Ega, Tapajos, St. Paulo; six individuals.

8. *Platyprosopus opacifrons*, n. sp. Piceus, antennis pedibusque obscure testaceis; elytris, abdomine segmentorum marginibus, anoque ferrugineis; capite omnium dense subtilissimeque punctato, pubescenteque, peropaco. Long. corp. $5\frac{1}{2}$ lin.

The sculpture of the upper surface of the head at once distinguishes this species from the others here previously described. The antennæ are rather long and slender, about as long as head and thorax, dull yellow; 3rd joint much longer than 2nd; 4—10 each a little shorter than the preceding one, the 10th rather longer than broad. Head about as broad as the thorax, nearly black, quite dull, very densely, evenly and finely punctured and pubescent. Thorax pitchy, slightly longer than broad, rather closely punctured, a narrow line along the middle free from punctures. Elytra quite as long as the thorax, dull reddish, very finely and densely punctured and pubescent. Hind body dusky, with the margins of the segments and its extremity reddish, very densely and finely punctured and pubescent. Legs dull yellow.

Ega; one specimen.

9. *Platyprosopus frontalis*, n. sp. Fusco-rufus, opacus, thorace nitido, pedibus testaceis; capite, elytris, abdomineque dense subtilissimeque punctatis et flavescenti-pubescentibus; thorace ad angulos anteriores dense subtiliter, disco parcius fortiter punctato, medio longitudinaliter impunctato. Long. corp. 5 lin.

Antennæ obscure red, rather long; 3rd joint much longer than 2nd. Head extremely densely covered with

a very fine punctuation and pubescence, which render it quite opaque. Thorax dark red, only slightly longer than broad, straight at the sides, shining, but at the front angles densely and finely punctured, near the middle sparingly and rather coarsely punctured, along the middle itself a rather broad, but not sharply-limited, space, free from punctures; this space bounded on each side by an irregular longitudinal patch of coarse punctures; the basal portion of the surface free from punctures. Elytra dark reddish, as broad as and only a little longer than the thorax, densely and finely punctured, and clothed with a very fine, short, dense, yellowish pubescence. Hind body fuscous, becoming redder towards the extremity, very densely, finely and evenly punctured, and clothed with an extremely fine and dense-yellow pubescence. Legs reddish-yellow.

A single individual, captured by Mr. Bates, and bearing no special locality, but probably from Tapajos.

*Obs.*—This species is extremely similar to *P. opacifrons*, but has the thorax much less densely and regularly punctured, and the pubescence with which the upper surface is clothed is rather denser, finer, and brighter in colour.

10. *Platyprosopus similis*, n. sp. Rufo-fuscus, thorace nitido, pedibus testaceis; capite, elytris, abdomineque dense subtilissime punctatis, et griseo-flavescenti pubescentibus; thorace ad angulos anteriores dense, subtiliter, disco parcius fortiter punctato; medio, spatio longitudinali minus discreto, impunctato. Long. corp. 6 lin.

Thorax just as broad as long; elytra a little longer than the thorax.

A pair, ♂ and ♀, of this species were brought from Manaos by Dr. Traill; they were attracted by light in August, 1874.

*Obs.*—This species is so extremely close to *P. frontalis* that a special description is unnecessary; it is rather larger and distinctly broader, and its colour is not so bright; the impunctate area on the middle of the thorax is also not quite so distinct. The different punctuation of its thorax will distinguish it from *P. opacifrons*, to which species it is also extremely similar.

### Brachydirus.

This genus consists at present of five described species, to which I now add nine others. It is quite peculiar to South America, and was established by Nordmann for a

Brazilian species, but was not considered valid by Erichson, who relegated Nordmann's species to the genus *Staphylinus*, and described two or three allied species. Kraatz, however, has re-affirmed the validity of the genus, and pointed out some of its important structural points. In point of fact, the genus seems at present to me a really distinct and isolated one. The structure and form of the head, and insertion of the antennæ, as well as some points in the formation of the prothorax, bring the genus into proximity with the *Aleocharini*, but it seems probable that the points alluded to indicate a functional, and not a genetic, relationship.

The species appear to be very rare in collections, so that it is quite possible they may have some peculiar mode of life.

1. *Brachydirus maculiceps*, n. sp. Niger, nitidus, antennis, ore, ano, femoribus anterioribus et intermediis apice, tibiis tarsisque anterioribus testaceis; fronte maculis duabus obscuris rufis. Long. corp. 5 lin.

Mas: abdomine segmento sexto ventrali, medio leviter, lateque emarginato, 7° medio profunde inciso.

Antennæ yellow, distinctly incrassated from the 5th to the 10th joint; 2nd and 3rd joints about equal; 4th much shorter than 3rd; 5th a little shorter than the 4th; 6—10 differing but little in length, but each a little broader than its predecessor, 6 and 7 about as long as broad; 8—10 transverse; 11th joint rather large, about twice as long as the 10th. Mandibles and palpi yellowish. Head black, near the vertex with two indistinct reddish spots; it is as broad as the thorax; all the front is coarsely and very densely punctured, the vertex more sparingly so; it is clothed with very fine and rather scanty, but longish, yellow-grey pubescence. Thorax narrower than the elytra, about as long as broad; the base and hinder angles rounded, the sides a little sinuate; so that it is a little broader in the front part; it is black and shining, with large, irregularly placed punctures, so arranged as to leave a narrow space at the base, a longitudinal space along the middle, and an obscure elevation near the front angles, free from punctures. Scutellum closely and rather finely punctured, and with a grey pubescence. Elytra a little longer than the thorax, black, with a faint bluish tinge; moderately coarsely and not closely punctured, with a very fine pubescence. Hind

body narrowed towards the apex, black, with the extremity of the 6th segment and the whole of the 7th bright yellow; the 2nd segment is nearly impunctate; 3—6 moderately closely and distinctly punctured, 7th very finely and sparingly; 3rd, 4th and 7th segments with a yellowish, the others with a blackish pubescence. The front legs are yellowish, with their coxæ and the base of the femora pitchy, the middle legs blackish, with the lower half of the femora yellowish. Hind legs black.

In the male the 6th segment is, on the underside, a little emarginate in the middle; the 7th with a rather deep and narrow notch, on each side of which the hind margin is just a little prominent. Lateral lobes of the 8th segment broader towards the extremity, instead of being pointed as usual.

Ega; eight individuals.

*Obs.*—This species is probably rather closely allied to *B. xanthoceros*, Nord. I have a female specimen from Peru in my collection, which I believe is conspecific with the Amazonian individuals.

2. *Brachydirus antennatus*, n. sp. Niger, nitidus, ano testaceo, pedibus anterioribus, intermediisque ex parte testaceis, antennis fuscis, testaceo-variegatis. Long. corp. 4 lin.

Mas: abdomine segmento sexto ventrali apice medio emarginato, 7° triangulariter producto, apice ipso emarginato.

Antennæ short, distinctly thickened towards the end; 1st joint yellowish at the base, fuscous towards the extremity; 2—5 fuscous, 6—9 pale yellow, 10 and 11 fuscous, 2nd and 3rd of about the same length; 6th joint about as long as broad, 7—10 transverse, the 10th rather strongly so; 11th long and pointed. Head with the eyes a little broader than the thorax, the front half very densely and coarsely, the hinder half much more sparingly punctured, finely and sparingly pubescent; mandibles and palpi pitchy. Thorax much narrower than the elytra, about as long as broad, its width greater in front than behind; it is black and shining, irregularly and very coarsely punctured, the punctures so disposed as to leave a narrow portion at the base; a line along the middle, and an obscurely elevated space near the front angles, free. Scutellum rather closely punctured. Elytra longer than the thorax, rather coarsely punctured. Hind body distinctly narrower towards the extremity, black, with the hinder portion of

the 6th and the whole of the 7th segment bright, reddish-yellow; segments 3—6 sparingly punctured, 7th nearly impunctate; the pubescence is scanty, and is yellowish on segments 3—5. Front legs yellowish, with the coxæ and base of the femora pitchy; middle legs dusky yellow, their tibiæ rather darker; hind legs nearly black, with the tarsi ferruginous.

In the male the 6th segment beneath has the hind margin emarginate in the middle; the 7th is triangularly produced in the middle, but instead of being pointed has a small notch at the extremity.

Ega; four specimens, 3 ♂, 1 ♀.

3. *Brachydirus styloceros*, n. sp. Fulvo-testaceus, abdomine nigro, ano pedibusque testaceis. Long. corp. 4½ lin.

Mas: abdomine segmento sexto ventrali apice medio sat profunde semicirculariter emarginato, 7° carinato-compresso, in stylo tenui apice bifido producto.

Antennæ yellow, rather short, thickened towards the extremity; 2nd and 3rd joints about similar in length; 6th joint about as long as broad, 7—10 transverse; last joint moderately long and pointed. Head a little broader than the thorax, very short; the front part extremely densely, the vertex more sparingly punctured. It is of a tawny-yellow colour, with an extremely fine pubescence. Thorax rather shorter than long, a little broader in front than behind, the sides a little sinuate; like the head and elytra, it is of a tawny-yellow colour, coarsely and irregularly punctured, with the usual smooth spaces. Elytra considerably longer than the thorax, rather coarsely punctured, with a distinct concolorous pubescence. Hind body narrower at the extremity, black, with the hind margin of the 6th segment and the whole of the 7th yellow; lateral lobes of the 8th black; 2nd segment impunctate, 3–6 moderately punctured, 3 and 4 with a yellowish pubescence. Legs yellow.

In the male the 6th segment of the hind body beneath has a broad and rather deep semicircular incision; the ventral plate of the 7th segment is most remarkably formed, being compressed into a sort of keel, and produced behind as a slender tongue, the extremity of which is divided into two still more slender, short styles.

In the female the ventral plate of the 7th segment is a little produced, and is pointed at the extremity; in this

sex also the head is rather less closely but more coarsely punctured than in the male.

Ega; eleven individuals.

*Obs.*—The peculiar structure of the ventral plate of the 7th segment shows no variation in a series of six ♂ individuals.

4. *Brachydirus cribricollis*, n. sp. Fulvus, abdomine nigro, ano testaceo; prothorace omnium fortissime punctato. Long. corp. 4½ lin.

Mas: abdomine segmento sexto ventrali apice medio obsolete emarginato, segmento 7° subtriangulariter inciso.

Antennæ yellowish, rather short and stout, much thickened towards the extremity; joints 2 and 3 about equal, 4th longer than the 5th and 6th, these two short; the 6th transverse, 7—10 strongly transverse; 11th long, stout and pointed. Head tawny, coarsely and densely punctured, the punctuation more sparing on the vertex. Thorax not quite so long as broad, distinctly broader in front, and with the sides a little sinuate, its upper surface extremely closely and deeply punctured; the punctures are numerous and close, and leave a very narrow line at the base, a central line, and a spot near the front angles, smooth. Elytra considerably longer than the thorax, of a similar colour to it, and the head coarsely and rather closely punctured, with their pubescence rather coarse and distinct. Hind body narrowed towards the apex, black, with the extremity of the 6th segment, and the whole of the 7th, yellow; the 2nd segment is impunctate, segments 3—6 closely and finely punctured and densely pubescent; the pubescence on segments 3—5 yellow, 7th segment nearly impunctate; 8th segment with its lateral lobes pale at the base, tawny brown at the extremity. Legs yellow.

In the male the hind margin of the 6th segment of the hind body is slightly emarginate, and the 7th has a rather narrow and moderately deep notch in the middle of the hind margin; in the female the hind margins of the 6th and 7th segments are simple, that of the 7th being gently rounded; the last joint of the antennæ seems to be shorter in this sex than in the male.

Ega and St. Paulo; seven specimens.

5. *Brachydirus simplex*, n. sp. Fulvus, abdomine nigro, apice antennisque testaceis, capite superne viridi-æneo, vertice fulvo. Long. corp. 5 lin.

Mas: abdomine segmento 6° ventrali margine posteriore emarginato, 7° apice medio anguste sat profundeque exciso.

Antennæ yellow, short, a good deal thickened towards the extremity; 4th and 5th joints similar to one another, not at all transverse; 6th joint a little transverse, 8—10 strongly transverse, 11th moderately long. Mandibles pitchy. Head with the upper surface largely of a metallic-green colour; the vertex however tawny; densely and coarsely punctured, the punctuation distinctly less dense on the vertex than on the anterior portion. Thorax a good deal narrower than the elytra, with rather coarse and numerous punctures, distributed in the usual manner. Elytra a good deal longer than the thorax, and, like it, of a tawny colour. Hind body black, with the hind part of the 6th and with the 7th segment yellow; the lateral lobes of the 8th segment black; the 2nd segment is impunctate, and has a few yellow hairs on each side; 3rd segment sparingly punctured, and with yellow hairs on each side; 4th and 5th rather sparingly punctured, much clothed with pale hairs; 6th segment more closely, 7th very sparingly, punctured.

In the male the hind margin of the ventral plate of the 6th segment is emarginate, while the next segment bears a narrow, rather deep notch in the middle. In the female the hind margin of the ventral plate of the 7th segment forms a very obtuse angle in the middle.

Three individuals, 2 ♂, 1 ♀, found by Mr. Bates; the male specimen described is labelled Pará. I have also a male individual of the species labelled Peru in my collection; it differs only very slightly from the Pará individual.

6. *Brachydirus amazonicus*, n. sp. Fulvus, abdomine nigro, ano testaceo, antennis articulis 8—10 fuscis. Long. corp. $4\frac{1}{2}$ lin.

Mas latet.

Allied to the *B. cribricollis;* antennæ longer and less stout, and with the three joints before the last one dark, and the thorax much more sparingly punctured. Antennæ with 3rd joint slightly longer than the 2nd, slender to the 6th joint, 7th slightly transverse, 8—10 distinctly so; last joint much pointed. Head broad, rather broader

than the thorax, closely and very coarsely punctured in front, more sparingly on the vertex. Thorax rather broader than long, yellowish, coarsely and irregularly, but rather sparingly punctured, with the usual smooth spaces; it is a good deal broader in front than behind, and considerably sinuate at the sides. Scutellum large, rather finely and closely punctured and pubescent. Elytra longer than the thorax, rather coarsely and closely punctured, and with a coarse pale pubescence. Hind body narrowed towards the extremity, black, with the hind part of the 6th segment, and the whole of the 7th, yellow; 2nd segment impunctate; 3rd to 6th rather closely and finely punctured and densely pubescent, the pubescence on segments 3—5 yellowish. Legs pale yellow.

Ega; one specimen (♀).

7. *Brachydirus Batesi*, n. sp. Fulvus, antennis (basi excepto), capite areâ pone mandibulas, abdomineque nigris, hoc ano testaceo; antennarum basi, pedibusque pallidis. Long. corp. 4—4½ lin.

Mas: abdomine segmento sexto ventrali medio emarginato, segmento 7° triangulariter producto, apice carinato-compresso.

Antennæ rather short, thickened towards the apex; first four or five joints pale yellow, the rest blackish, the extremity of the 11th joint being again paler; 6th joint considerably stouter than the 5th, about as long as broad, 7—10 strongly transverse; 11th joint pointed, stout and rather long. Head broader than the thorax, with the palpi pale yellow; the mandibles pitchy; the labrum, and a space behind it (not reaching to the eyes on each side), black, the rest tawny; it is coarsely punctured, the punctures on the front part not so dense as in the other species, and rather irregular, the hinder part (broadly) more sparingly punctured. Thorax about as long as broad, much sinuate at the sides, the front markedly broader than the hind part, very coarsely and rather sparingly punctured, with the usual smooth spaces. Scutellum closely and moderately finely punctured. Elytra considerably longer than the thorax, coarsely, deeply and rather closely punctured. Hind body black, with the 7th segment and hind part of the 6th pale yellow, finely but not densely punctured, the yellow portion almost impunctate; the 3rd and 4th segments and the sides of the 5th with the pubescence yellow. Legs pale yellow.

In the male the 6th segment of the hind body beneath is a little emarginate behind. The 7th segment has the hind part much produced and pointed, and is compressed in a keel-like manner as it approaches the extremity.

Ega; four male individuals.

*Obs.*—Besides these four males, I have a single individual from the same locality, which I believe to be the female of *B. Batesi;* the ventral plate of the 7th segment is distinctly produced, and its hind margin is simply rounded; the antennæ are slightly shorter and more clavate than in the other sex.

8. *Brachydirus longipes*, n. sp. Fulvus, abdomine capiteque superne nigris, illo apice testaceo, hoc vertice fulvo; antennis fuscis. Long. corp. $4\frac{1}{2}$ lin.

Mas latet.

Antennæ short, thickened towards the extremity, blackish, the base of the 1st joint yellowish; 5th and 6th joints small and short, but scarcely transverse, 7—10 rather strongly transverse. Palpi and mandibles dark. Head above black, with the vertex fulvous, coarsely and very densely punctured, the vertex more sparingly than the front part. Thorax tawny, with the very coarse and close punctures distributed in the usual manner. Elytra rather longer than the thorax, rather coarsely punctured, similar in colour to the thorax. Hind body black, with the 7th segment and hind part of the 6th yellow, the styles of the 8th segment dark tawny; segments 4, 5 and 6 are rather closely punctured, and 4 and 5 bear pale hairs, as also do 2 and 3 near the lateral margins. Legs yellowish, with the femora, except at the knees, slightly infuscate; front legs rather long and slender.

In the female the hind margin of the ventral plate of the 7th segment is simply rounded.

Pará; a single female.

*Obs.*—Though closely allied to *B. Batesi*, I have no doubt this is a distinct species; the antennæ are shorter and darker in colour at the base, the black colour covers a larger portion of the head, which also is more densely punctured, the coarse punctures of the thorax are more crowded together, and the anal styles are paler in colour.

9. *Brachydirus æneiceps*, n. sp. Fulvus, capite supra (vertice excepto) ænescente, abdomine nigro, apice testaceo. Long. corp. $3\frac{1}{2}$ lin.

Mas: abdomine segmento sexto ventrali apice leviter emarginato, segmento 7° medio triangulariter exciso.

Antennæ rather short, a little thickened towards the extremity; 3rd joint scarcely so long as the 2nd, 6th about as long as broad, 7—10 transverse, 11th pointed. Palpi and parts of the mouth pitchy yellow. Head broader than the thorax, its upper surface greenish-brassy, with the hinder part tawny, the punctuation of the metallic part very dense, and finer than in the other species here described; the tawny part much more sparingly punctured. Thorax about as long as broad, slightly sinuate at the sides, and with the front part a little broader; its upper surface very coarsely, and, with the exception of the usual smooth spaces, rather closely punctured. Elytra coarsely and moderately closely punctured, like the thorax of a tawny colour. Hind body narrowed towards the extremity, black, with the 7th segment and hind part of the 6th yellow; 2nd segment impunctate, 3—6 rather sparingly punctured, 3—5 with a yellow pubescence at the side parts. Legs yellow, with the femora infuscate; the sternum pitchy.

In the male the hind body beneath has the 6th segment a little emarginate at the extremity, and the 7th segment has a rather deep and narrow triangular notch.

Ega; one specimen (♂).

### Plociopterus.

This genus consists of six described species, and I here characterize ten new ones. The five species known to Erichson were described by him under the generic name of *Staphylinus*, and it is to Kraatz that we are indebted for the name and some of the characters of the genus; these insects are undoubtedly most allied to *Brachydirus*, but the structure of the antennæ and front feet seem to afford satisfactory points of distinction.

The species are confined to tropical America, and those I possess are easily referable to two sections, in one of which the front tarsi and tibiæ are simple in each sex, while in the other section they are more or less dilated, at any rate in the males, and the hinder face of the front tibiæ is cut away in a peculiar manner near the extremity. Three of the species here described were indicated as being captured in fungus, which, however, they probably frequent for predaceous purposes.

In this genus the sexual characters become remarkable, and are well worthy of study, for they appear to me to suggest the functional result of some very remarkable modifications. The specimen of *P. Traili* here described was received by me in spirit in very fresh condition; and by dissecting out the apical segment, and mounting it immediately in Canada balsam, the structure of the hard and soft parts of the intromittent organ are finely displayed, as well as their position in relation to the lateral valves.

1. *Plociopterus tricolor*, n. sp. Niger, nitidus, antennis articulis ultimis quatuor pallidis, abdominis apice rufo-testaceo; elytris cyaneis fasciis duabus, abdomineque fasciâ singulâ cinereo-tomentosis. Long. corp. 6—7 lin.

Mas: abdominis segmento sexto ventrali lineâ mediâ transversali dense longeque testaceo-pilosâ instructo, margineque apicali leviter emarginato, segmento 7° apice medio late triangulariter emarginato; tarsis anticis simplicibus.

*Obs.*—Mares majores, elytris lineâ laterali elevatâ longitudine variabile instructis, insignes.

Antennæ slender, elongate, black, with joints 8—11 pale yellow; 3rd joint very long, about twice as long as the 4th; 4th about equal to 2nd in length; 11th joint oblong, longer and narrower than the preceding one. Head broader than the thorax, black, shining, coarsely and irregularly punctured; the punctures so disposed as to leave a small triangular space behind the labrum, and a large irregular space on the disc, free; the punctures armed with fine greyish setæ. Mandibles and palpi elongate, black or pitchy-black. Thorax about as long as broad, much narrower than the elytra, a little narrowed behind, the hind angles quite rounded, the sides scarcely sinuate; it is black and shining, coarsely and irregularly punctured, a broad irregular smooth space in the middle free; the punctures are finer at the sides. Scutellum large, dull, closely and finely punctured, clothed with a dense grey pubescence. Elytra longer than the thorax, blue, rather closely and finely punctured, clothed at the base and apex with a dense grey pubescence. Hind body narrower towards the extremity, black, with the 6th and 7th segments bright yellow; 2nd segment impunctate, 3rd finely and rather closely punctured, and clothed with a grey pubescence; 4 and 5 finely and not closely punctured,

with a fine black pubescence; 6th finely punctured, 7th more sparingly and finely punctured, these two with a concolorous yellow pubescence.

Legs black, with the tarsi obscure reddish.

In the male the 6th segment on the underside is furnished in the middle with a line of very long projecting hairs, and the hind margin is slightly emarginate; the 7th segment has a large triangular notch; the ædeagus is large, and is furnished with a stout ligula projecting far beyond the body of the organ and bifid at the extremity. In the larger individuals of this sex the mandibles and palpi are more elongate, and the elytra are furnished near the outside with a longitudinal fold or plica of variable length; this is quite absent in the smaller males. The anterior tarsi are quite simple.

Ega; nine specimens.

2. *Plociopterus fungi*, n. sp. Niger, nitidus, abdominis apice rufo-testaceo; elytris cyaneis, fasciatim cinereo-pubescentibus; antennis articulis duobus ultimis albidis. Long. corp. 7 lin.

This species is almost the same as *P. tricolor* in most respects, but it has only two joints at the apex of the antennæ white, and the male characters are a little different.

In the male the 6th segment is on the underside, furnished across the middle with a curved line of long projecting hairs, and its hind margin is rather deeply emarginate; the 7th segment bears a large triangular notch. The ædeagus is similarly formed to that of *P. tricolor*, but its elongate ligula is less produced, and the bifid processes at its extremity are shorter and more rounded.

Pará; a single specimen found by Mr. Bates; it is labelled "stump fungus."

*Obs.*—As I have dissected out the ædeagus in three males of *P. tricolor*, and find its form to be completely similar in the three, I cannot consider this individual to be a mere variety of the Ega species.

3. *Plociopterus nigripes*, n. sp. Niger, nitidus, capite, prothorace, elytrisque cyaneis; antennis articulis ultimis tribus testaceis, abdomine apice rufo-testaceo; elytris fasciis duabus, abdomine fasciâ singulâ cinereo-tomentosis. Long. corp. 5½ lin.

Mas: abdomine segmento sexto ventrali medio basin versus foveâ transversâ setigerâ ornato, segmento 7° apice medio, late minus profunde emarginato; tarsis anticis simplicibus.

Antennæ moderately long, blackish, the last three joints yellow; 3rd joint twice as long as 2nd, 4th a little longer than the 2nd. Mandibles and palpi pitchy. Head above blue, slightly broader than the thorax, very coarsely punctured, with a triangular space behind the labrum, and a small central one, impunctate; pubescence and setæ rather long, underside black and impunctate. Thorax bluish above, a little longer than broad, a little sinuate at the sides, a little narrowed behind, very coarsely punctured, with a medial line impunctate; pubescence long, scanty and fine, grey. Scutellum dull, finely punctured and pubescent. Elytra longer than the thorax, moderately closely and not finely punctured, at the base and apex with grey pubescence. Hind body narrowed towards the extremity, black, with the 6th and 7th segments bright yellow; 2nd segment impunctate, 3—5 rather sparingly punctured, 3rd with a grey pubescence. Legs black, tarsi pitchy.

In the male, on the underside, the 6th segment of the hind body has in the middle, near the base, a short transverse impression or fovea, bearing some long, fine hairs; the 7th segment is furnished in the middle of the hind margin with a broad shallow notch or emargination. The ædeagus is small, and furnished with a ligula shorter than the body of the organ, and so slender as to be easily overlooked. The front tarsi are simple.

St. Paulo; one ♂ specimen.

*Obs.*— Notwithstanding the extreme resemblance of this species to *P. tricolor*, the ædeagus is so different as to suggest that the two insects may possibly have to be referred to distinct genera.

4. *Plociopterus affinis*, n. sp. Niger, nitidus, antennis articulo ultimo ferrugineo, elytris cyaneis, fasciatim cinereo-pubescentibus; abdominis segmentis apicalibus rufo-testaceis, stylis analibus nigris. Long. corp. $6\frac{1}{2}$ lin.

Mas latet.

Antennæ moderately long, black, with the apical joint reddish. Mandibles and palpi pitchy. Head shining black, coarsely punctured, with a large space on the middle

impunctate. Thorax shining black, distinctly shorter than broad, coarsely punctured, with a broad, irregular, impunctate space along the middle. Elytra rather longer than the thorax, blue, with ashy pubescence at the base and extremity, rather coarsely punctured. Hind body black, with the 6th and 7th segments bright reddish-yellow; the anal styles are yellow at the base, but their apical half is quite black; the segments are rather closely punctured, and the 2nd and 3rd bear an ashy pubescence. The legs, including the coxæ, are black, with the tarsi pitchy, but having the apical joint reddish.

Pará; a single female taken two or three years ago.

*Obs.*—This unique specimen, though in bad condition, represents, I have no doubt, a distinct species, which will be easily distinguished from *P. tricolor* and *P. fungi*, by the colour of the antennæ and the anal styles. Compared with a female of *P. tricolor* it is seen that the antennæ are much shorter, that the thorax is shorter and more sinuate at the sides, and more narrowed behind, and that the elytra are shorter and more coarsely punctured.

5. *Plociopterus dimidiatus*, n. sp. Niger, nitidus, abdomine antennarumque articulo ultimo rufo-testaceis; elytris cyaneis, fasciis duabus cinereo-pubescentibus. Long. corp. $5\frac{1}{2}$ lin.

Mas: abdominis segmento 6° ventrali apice medio obsolete emarginato, 7° triangulariter inciso.

Antennæ black, with the last joint yellow; 3rd joint not quite twice as long as the rather long 2nd joint, 4th about as long as 2nd, 5th long, but shorter than 4th; last joint long, rounded at the extremity. Head scarcely broader than the thorax, shining black, with a very faint bluish tinge; the upper side with coarse, irregular punctures, those in the front very large, the disc free from punctures. Thorax much narrower than the elytra, about as long as broad, slightly narrowed behind, and a little sinuate at the sides, with coarse scattered punctures, which are neither so numerous nor so coarse as in the other species here described; a broad middle space free from punctures. Scutellum dull, the lower half finely punctured, and with a fine grey pubescence. Elytra blue, moderately closely and moderately finely punctured, with two bands of grey pubescence. Hind body yellow, narrowed towards the extremity; 2nd segment almost impunctate, 3—6 sparingly

punctured, especially in their centres, 7th still more finely and sparingly punctured. Legs black, with the tarsi reddish. The basal joint of the front tarsi quite as long as the three following together.

The male has the hind margin of the 6th ventral segment slightly emarginate in the middle, and the 7th with a triangular notch in the middle. The ædeagus is rather broad and has the ligula flat and broad, similar in length and breadth to the body of the organ, and closely applied thereto. The front feet simple.

Tunantins; one ♂.

*Obs.*—This species must be closely allied to *Staphylinus scenicus*, Er., but I have no doubt a comparison will prove it distinct therefrom.

6. *Plociopterus lætus*, n. sp. Niger, nitidus, antennis (articulis 7—9 fuscis), pedibus, abdomineque rufo-testaceis; elytris cyaneis, fasciis duabus cinereo-pubescentibus. Long. corp. $5\frac{1}{2}$ lin.

Mas: tarsis anticis leviter dilatatis, abdominisque apicis structurâ complicatâ insignis.

Antennæ rather long and slender, yellow, with joints 7—9 darker; 3rd joint elongate, 4th about as long as 2nd; from 4—10 each is a little shorter than its predecessor; last joint rather long, rounded at the extremity. Parts of the mouth yellow. Head a little broader than the thorax, black and shining, coarsely and irregularly punctured, with the middle part smooth, the punctures behind the labrum extremely large and confluent. Thorax much narrower than the elytra, about as long as broad, distinctly narrowed behind; the sides a little sinuate, the upper surface black and shining, very coarsely and irregularly punctured, a middle longitudinal space impunctate. Scutellum closely and finely punctured, with a grey pubescence. Elytra longer than the thorax, blue, with two bands of grey pubescence, one at the base the other a little before the extremity, their punctuation moderately fine, not close. Hind body narrowed towards the extremity, yellow, with the 2nd segment pitchy; segments 3—6 finely and rather sparingly punctured. Legs yellow, with the coxæ pitchy. The anterior tibiæ are dilated behind (especially in the male), and furnished just below the middle with three or four coarse setæ placed close together; thence they are narrowed to the extremity. First joint of front tarsus but little longer than the 2nd.

In the male—joints 1—3 of the front feet are a little dilated. The dorsal plate of the 7th segment of the hind body is produced in the middle, the apex of the produced part a little emarginate; on each side of this large middle projection is a much smaller projection. On the underside the hind margin of the 6th segment is slightly trisinuate; the 7th segment is a little produced in the middle, and has a deep, rather narrow notch in the middle. The 8th segment has the lateral lobes modified and irregular, each is corneous, bluntly pointed at the extremity, and there furnished with two stout black setæ; before the extremity each is distorted and has an irregular broad projection, which is black at its extremity, the rest of the lobe being pale yellow. The ligula of the ædeagus is compressed and keel-like, its hinder half furnished with fine, black, file-like asperities, it reaches much beyond the body of the organ; from the latter projects a small fine appendage, extending about to the apex of the ligula.

Ega; 2 ♂s, 1 ♀; also a male, taken at Garrao by Dr. Trail on the 11th November, 1874, in fungus.

7. *Plociopterus ventralis*, n. sp. Niger, nitidus, antennis (articulis 7—9 fuscis), pedibus, abdomineque testaceis; elytris cyaneis, fasciis duabus cinereo-pubescentibus. Long. corp. 4½ lin.

Mas: tarsis anticis leviter dilatatis; abdomine segmento 7° ventrali producto, medio exciso.

This species is extremely similar to *P. lætus*, but it is smaller and has the head a great deal smaller, and the male characters very different. The front tibiæ and tarsi are similarly formed to those of *P. lætus*, but the abdominal characters are very different. The dorsal plate of the 7th segment has the hind margin simply rounded. The hind margin of the 6th ventral segment is slightly emarginate in the middle, and the ventral plate of the 7th segment is distinctly produced, and has a well-marked notch in the middle at the extremity. The styles of the 8th segment are yellow, and are broad at their extremity, which is densely fringed with short, black, file-like setæ, and on the under face of the style there is an additional short series of such setæ very close to the extremity.

Ega; two males.

8. *Plociopterus Traili*, n. sp. Niger, nitidus, antennis

(articulis 6—9 fuscis), pedibus, abdomineque testaceis; elytris viridi-cyaneis, minus discrete bifasciatim cinereo-tomentosibus. Long. corp. 5 lin.

Mas: abdomine segmento 7° dorsali margine posteriore medio obtuse angulato, angulo ipso exciso; ventrali sat producto, apice lato, leviter emarginato.

Antennæ quite as long as head and thorax, pale yellow, with joints 6—9 infuscate. Palpi pale yellow; mandibles pitchy. Head black, with a very slight greenish reflection, very coarsely punctured, but with a large impunctate space on the middle; it is just about as broad as the thorax. Thorax narrower than the elytra, just about as long as broad, shining black, with an irregular series of coarse punctures along each side of the middle, and with some other coarse punctures between these and the sides, and with a short longitudinal impression in front of the base in the middle. Elytra slightly longer than the thorax, rather coarsely punctured, clothed at the base and extremity with pale hairs, which form two not very distinct transverse fasciæ. Hind body yellow, with the basal segment blackish; the basal segments impunctate, and the 6th only sparingly and finely punctured. Legs yellow, with the coxæ black.

In the male the three basal joints of the front tarsi are distinctly dilated; the hind margin of the dorsal plate of the 7th segment is a little produced, so that it would form in the middle a very obtuse angle, but where the angle would be there is a very small excision; the ventral plate is distinctly produced in the middle, but the middle part is not acuminate, but forms a rather broad lobe, which has its hind margin a little emarginate. The styles of the 8th segment are yellow, and are broad at their extremity, which is very densely set with short, black, file-like setæ, and both on the upper and under side there is an additional short row of such setæ very near the extremity.

Garrao; a single male, found in fungus by Dr. Trail, on the 11th November, 1874.

*Obs.*—This species is very closely allied to *P. ventralis*, but the male characters are a little different, and the thoracic punctuation is rather coarser.

9. *Plociopterus virgineus*, n. sp. Niger, nitidus, antennis ex parte, pedibus, abdomineque rufo-testaceis; elytris

cyaneis, fasciis duabus cinereo-pubescentibus, abdomine supra segmentis 4 et 5 subtiliter punctatis. Long. corp. 5 lin.

Mas latet.

Fem.: abdomine segmento 7° et supra et infra medio leviter producto, acuminatoque.

This species is very closely allied to the preceding, so that it is only necessary to point out the characters distinguishing it therefrom. The antennæ have the first five joints pale yellow, 7—10 nearly black, the 11th again pale. The punctures on the thorax are coarser and rather more numerous in *P. virgineus;* the upper side of the hind body is distinctly though finely punctured, this being especially evident on the 3rd and 4th segments. The hind body is also narrowed and pointed at the extremity, but this is probably a character peculiar to the female. I have no doubt the discovery of the male will prove this to be a good and distinct species.

Fonteboa; one ♀ specimen.

*Obs.*—Though this species greatly resembles *P. lætus*, *P. ventralis* and *P. Traili*, I feel no doubt it will prove distinct from all of them: the female is readily distinguished by its sexual characters from the same sex of *P. lætus;* the females of the other two species being unknown to me, I can of course make no comparison with them.

10. *Plociopterus mirandus*, n. sp. Niger, nitidus, antennis, pedibus, abdomineque rufo-testaceis; elytris cyaneis, fasciis duabus cinereo-pubescentibus; abdomine apicem versus vix angustato, fere impunctato. Long. corp. 4½ lin.

Mas: tarsis anticis leviter dilatatis, abdominisque apicis structurâ valde complicatâ insignis.

Fem. latet.

Antennæ slender and rather long, yellow, with the 7th and 8th joints infuscate; 3rd joint not quite twice the length of the 2nd; 4th not quite so long as 2nd; 11th joint rounded at the extremity. Palpi pale yellow, mandibles pitchy. Head about as broad as the thorax, above of an obscure-greenish colour, and not very shining; all the disc free from punctures, and a little convex; the sides coarsely punctured; a quadrate space behind the labrum depressed, and with some very coarse but not well-defined punctures. Thorax black and shining, narrower than the elytra, transversely convex, its length hardly greater than its

width; just a little broader in front, and the sides a little sinuate; on each side of the middle is an irregular line of about nine punctures, and other punctures are scattered along the sides, especially near the front part. Elytra about the length of the thorax, blue, with a grey pubescence at the base and near the extremity, moderately closely punctured. Hind body yellow, with the 2nd segment darker; it is almost impunctate, and very sparingly pubescent above, beneath distinctly but rather sparingly punctured, and with a fine long pubescence. Legs yellow, with the coxæ pitchy.

The characters of the male are very complicated and most remarkable. The front tibiæ are dilated towards the apex, and somewhat concave on the inner side; the three basal joints of the front tarsi are a little dilated. The dorsal plate of the 7th segment of the hind body has three sinuses at the hind margin; the middle one is the broader, but is not formed by the margin being cut away, but by its being turned downwards; at the base of this turned-down portion are two sharp teeth, placed near to one another; from the extremity of this turned-down part project two vertical processes. The ventral plate of the same segment is a little produced, and has a deep incision or notch in the hind margin; along each side of this notch it is broadly impressed. The lateral lobes of the 8th segment are modified in a most extraordinary manner; each terminates in three processes,—a broad, truncate, central one, armed on the inner side with two rows of file-like asperities, and a long, slender, somewhat curved process on each side. The body of the ædeagus terminates in a produced point or beak, and is furnished beneath with a ligula longer and broader than the beak, and densely set with black asperities on each side, towards the end.

Ega; two males.

*Obs.*—This species is undoubtedly closely allied to *St. venustus*, Er., from Cayenne, but I cannot make the ♂ characters agree with Erichson's description. These male characters are the most extraordinary I have met with in any Coleopterous insect.

## Xanthopygus.

This genus, like the two preceding ones, is due to Dr. Kraatz; but unlike them, it seems to be composed of

heterogeneous species, and will not improbably undergo other changes. The species known to Erichson were described by him in part as belonging to the genus *Staphylinus*, and in part to the genus *Philonthus*. About sixteen species are described, all from South America. I here refer eleven Amazonian species to the genus, of which I consider seven new. The species, however, present great difficulties, and I have no doubt some time must elapse, and considerable discussion and comparison take place, before their limits and characters are fully ascertained.

1. *Staphylinus sapphirinus*, Er.

This appears to be a common species in the Amazon Valley; a fine series before me indicate it as being found at Obydos, Tapajos, Ega and Pebas. I think I am correct in the name I have assigned to these specimens, for they agree well with Erichson's description (Gen. et Spec. p. 364), except that the male has the hind margin of the 6th segment beneath rather deeply emarginate, while no allusion is made to this in the description above mentioned. Erichson records the species from Columbia and from the Pará in the north of Brazil, but it does not occur, I believe, so far south as Rio de Janeiro.

2. *Xanthopygus Solskyi*, n. sp. Niger, nitidus, abdominis segmentis duobus ultimis rufis; elytris cyaneis, antennis testaceis; abdomine apicem versus crebre punctato. Long. corp. 7 lin.

Antennæ yellow, 1½ lin. in length; 4th joint much longer than broad, 10th about as long as broad; palpi yellow; labrum pitchy yellow. Head very nearly as broad as the thorax, black, with a rather large impunctate space on the middle, elsewhere punctured: the punctures not coarse nor close. Thorax shining black, just about as long as broad, the sides rather sparingly and not coarsely punctured, with a rather broad impunctate space along the middle, and also in front of the base at the sides. Scutellum punctured. Elytra rather longer than the thorax, of a dark blue colour, moderately closely and coarsely punctured. Hind body rather slender, black, with the two basal segments entirely reddish-yellow; the segments rather coarsely but not altogether densely punctured; the punctuation much denser on the basal than on

the apical portion of each segment; the 6th rather more sparingly punctured than the preceding one. Legs black; front tarsi with the apical joints reddish, and clothed beneath with tawny hairs.

In the male the hind margin of the ventral plate of the 7th segment is emarginate in the middle, and in front of the emargination the surface is shaved away so as to form an angular depression.

Pará, one specimen, ♂; Ega, one ♀.

*Obs. I.*—This species closely resembles the preceding one, but is decidedly narrower, and has the head and the thorax and the 6th abdominal segment less densely punctured, and the male characters different; besides the external differences, I may add that the apical portions of the ædeagus are very much less elongate than in *X. sapphirinus*.

*Obs. II.*—Besides the specimens above mentioned, I have several other individuals from Tapajos, Ega and St. Paulo, which are, perhaps, varieties of this species, but as they are all females I cannot speak certainly; they are generally a little larger than the individual described, in two of them the elytra are more purple, and in the larger specimens the head and thorax are more coarsely punctured, and the antennæ a little stouter. I have also a male individual, found by Mr. Buckley in Ecuador, which I have no doubt is conspecific with the Pará male from which I have drawn up my description; this specimen has the hind margin of the 6th segment underneath a little emarginate in the middle; this point I cannot ascertain for the Pará individual, as just that part of the specimen is slightly broken.

*Obs. III.*—I have named this species in honour of Mr. Solsky, of St. Petersburg, who has of late years published the descriptions of many interesting species of South American *Staphylinidæ*.

3. *Xanthopygus cyanipennis*, n. sp. Niger, nitidus, antennis testaceis; elytris cyaneis, abdomine segmento 6° dimidio apicali, segmentoque 7° toto rufo-testaceo. Long. corp. 7 lin.

Mas: segmento 6° ventrali margine apicali medio obsolete emarginato, segmento 7° sat profunde triangulariter emarginato.

Allied to *X. sapphirinus*, but considerably narrower, the punctuation of head and thorax much more sparing,

the hind body not nearly so densely punctured, and with the base of the 6th segment black.

The male differs from that of *sapphirinus* by wanting the transverse pilose line on the 6th segment beneath, by having the hind margin of the same segment only obsoletely emarginate, and by the different shape of the notch of the 7th segment.

Ega; four male specimens.

*Obs.*—This species may, perhaps, ultimately prove to be only a variety of *X. Solskyi*, from which it differs almost solely by the dark basal portion of the 7th segment of the hind body. In the male the notch of the 7th segment is deeper, and the ædeagus itself is larger than in *X. Solskyi;* but the former of these characters must be, I think, liable to variation, for in one of the individuals above mentioned the notch scarcely differs from that of *X. Solskyi*, and yet I can scarcely anticipate that this will prove a different species, for the resemblance in other respects is very great.

4. *Xanthopygus apicalis*, n. sp. Niger, nitidus, antennis testaceis; elytris cyaneis, abdomine segmento 6° dimidio apicali, segmento 7° toto rufo-testaceo. Long. corp. 5 lin.

Mas: abdominis segmento 6° ventrali margine apicali medio obsoletissime emarginato, segmento 7° late minus profunde triangulariter emarginato.

Much smaller than *sapphirinus*, with head, thorax and hind body more sparingly punctured. Very close to *X. cyanipennis*, and differing therefrom only by being considerably smaller and more slender, and by the broader and less deep notch of the 7th segment in the male. I have not examined the ædeagus.

Ega; two specimens, ♂, ♀.

5. *Xanthopygus violaceus*, n. sp. Niger, nitidus, antennis testaceis, capite thoraceque violaceis; elytris cyaneis, abdomine segmento 6° dimidio apicali, segmentoque 7° toto rufo-testaceo. Long. corp. 6 lin.

Mas: abdominis segmento 6° ventrali medio lineâ transversâ longe pilosâ, margineque apicali minus evidenter emarginato, seg. 7° apice sat profunde inciso.

Much smaller than *sapphirinus*, and readily distinguished by the beautiful violet colour of the head and

thorax. Antennæ and palpi entirely yellow. Head rather smaller than the thorax, with the disc broadly impunctate, the punctures rather coarse and moderately numerous. Thorax about as long as broad, nearly straight at the sides, the punctures numerous and rather coarse, the middle smooth space rather narrow. Scutellum rather coarsely punctured. Elytra blue, broader and rather longer than the thorax. Hind body densely and rather coarsely punctured, the hinder half of the 6th segment as well as all the 7th reddish-yellow. Legs black, front tarsi ferruginous.

The male has on the underside a transverse line of long erect hairs in the middle of the 6th segment, the hind margin of the same segment slightly emarginate; in the middle of the hind margin of the 7th segment is a rather deep, abruptly cut-out notch.

Conceicão, Rio Mauhes, May, 1874, one male; Tunantins, 24th November, 1874, one female, found by Dr. Trail; also one specimen of each sex brought from Ega by Mr. Bates.

*Obs. I.*—The female of this species has the antennæ a little shorter and their penultimate joints more transverse than the ♂.

*Obs. II.*—Though this species is closely allied to *X. sapphirinus*, there can be no doubt it is quite distinct therefrom. It is worthy of remark that not only do the external abdominal characters of the ♂ greatly resemble those of *X. sapphirinus*, but that also the structure of the ædeagus in the two species is very similar, the ligula being in both more detached from the body of the organ than in the other species here described. The front tarsi are, on the other hand, sufficiently dissimilar in this sex of the two species to afford of themselves satisfactory characters by which the two may be distinguished; they are not so broad and patellated in *X. violaceus*, and are less densely pubescent beneath.

6. *Xanthopygus depressus*, n. sp. Subdepressus, niger, nitidus, elytris vel viridibus vel cyaneis, abdominis segmentis ultimis duobus flavis, antennis pedibusque ex parte rufo-testaceis. Long. corp. 5 lin.

Mas: abdominis segmento 7° ventrali margine apicali medio, late haud profunde triangulariter emarginato.

Antennæ dull yellow at the base, infuscated in the

middle, the last joint again paler; 3rd joint rather long and slender, considerably longer than the 2nd; from the 4th to the 10th each joint is a little shorter than its predecessor, the 4th considerably longer than broad, 7th about as long as broad, 8—10 rather transverse; last joint pointed, nearly twice as long as the 10th. Palpi yellow, mandibles pitchy. Head broad, quite as broad as the thorax, coarsely and irregularly punctured, with a broad impunctate space in the middle. Thorax about as long as broad, a little narrowed behind, with two irregular lines of ten or twelve coarse punctures along the middle, separated by a rather broad, impunctate space, and with other coarse, irregular punctures, especially numerous near the anterior angles. Scutellum large, rather strongly punctured, with a narrow impunctate margin. Elytra broader than the thorax, and about as long, greenish or bluish, rather sparingly punctured. Hind body narrowed towards the extremity, black, with the last two segments yellow; segments 2—5 moderately closely and distinctly punctured, 6th more finely, 7th very finely punctured. The four front legs yellow, the hinder ones pitchy.

The male has a shallow, broad notch in the middle of the hind margin of the 7th segment beneath.

Pará, Ega, St. Paulo, Rio Purus; sixteen individuals.

*Obs.*—I judge from the specimens before me that this is a variable species; the individual from which the above description is taken is a large male from St. Paulo, having the head and thorax more coarsely punctured, and the antennæ more elongate than in the other individuals. The individual from Rio Purus is a small female, having the head and thorax sparingly punctured, and is a little smaller, narrower, and less depressed than the other specimens. The two individuals from Pará have the front legs black, or nearly so, and the antennæ rather shorter, while one of them has the elytra of a pitchy colour, with blue reflections. In the absence of any definite characters to separate these forms, I have considered them all as one species.

7. *Xanthopygus nigripes*, n. sp. Niger, nitidus, antennis fusco-testaceis, elytris viridi-cyaneis, abdomine segmentis duobus ultimis flavis. Long. corp. 5 lin.

Closely allied to *X. depressus*, and distinguished only by the following characters. The head is smaller, being

a little narrower than the thorax; the antennæ are dusky yellow, and are rather shorter, joint 4 being about as long as broad, joints 5—10 transverse; all the legs are black. The 6th segment of the hind body slightly darker at the extreme base; the head and thorax rather more finely punctured.

St. Paulo; one specimen, ♀.

*Obs.*—A second female individual, labelled only Amazons, departs still more from *X. depressus*, its head and thorax being still more finely and sparingly punctured; but I believe it to be only a variety of *X. nigripes*.

8. *Staphylinus xanthopygus*, Nord.

I refer to this name a series of individuals, from Ega and Pebas; they appear to me to be quite conspecific with other specimens from Mexico and central America, and I have two or three other closely allied species from other parts of South America. The characters of the male are not described either by Nordmann or Erichson; in that sex the hind margin of the ventral plate of the 7th segment of the hind body has a broad but shallow notch in the middle, and the front tarsi are slightly more dilated than in the female. Erichson names the species *Philonthus xanthopygus*, but his description does not accord very satisfactorily with Nordmann's, and I judge it to have been drawn up from more than one species. In the Munich Catalogue, Nordmann's species is recorded under the name *Xanthopygus abdominalis*, and it is probable that the appellation of the species will be again changed.

9. *Xanthopygus cognatus*, n. sp. Subdepressus, niger, nitidus, abdomine segmentis duobus ultimis rufo-testaceis. Long. corp. 6 lin.

Closely allied to *Staphylinus xanthopygus*, Nord. (*Philonthus xanthopygus*, Er.), but not half the size of that species. Antennæ rather short and stout, not thickened towards the extremity; the first 3 joints black, the rest fuscous; 3rd joint almost shorter than 2nd, 4th and 5th slightly transverse, 6—10 evidently so; last joint sinuate at the extremity and pointed. Head short, about as broad as the thorax, coarsely and irregularly punctured, the middle parts without punctures. Thorax about as long as broad, the sides scarcely sinuate behind and very little rounded towards the front. Along the middle are

two irregular rows of large punctures, leaving a broad space between them free from punctures; scattered about the sides are also numerous large irregular punctures, especially numerous towards the front. Scutellum closely punctured. Elytra longer than the thorax, moderately closely and finely punctured. Hind body black, with the extreme hind margin of the 5th segment, and the whole of the 6th and 7th segments, reddish-yellow; the punctuation moderately close and fine. The legs are stout, pitchy black, with the tarsi pitchy red; the four hinder tibiæ strongly spinulose.

Ega; one specimen, ♀.

10. *Philonthus analis*, Er.

Pará, Obydos, Tapajos, Ega, St. Paulo.

This appears to be one of the most widely distributed and abundant of the South American *Staphylinidæ;* one of Mr. Bates's specimens is labelled as found in dung.

The male characters are omitted by Erichson: in that sex the 6th segment of the hind body has, on the underside on its middle, a small fovea, from which projects a slender tuft of elongate hairs, and the following plate has a deep but rather narrow notch at the extremity; the front tarsi are moderately dilated in each sex, in the male only slightly more than in the female.

11. *Staphylinus bicolor*, Lap. (*Philonthus bicolor*, Er.).

Ega and St. Paulo.

The male characters in this species also have not been recorded; in that sex the ventral plate of the 6th segment of the hind body has, near the base in the middle, a transverse impunctate space, in front of which is another transverse space which is very slightly depressed and finely punctured; the hind margin of the 7th segment is very slightly emarginate in the middle; the front tarsi are rather broadly dilated and are apparently similar in the two sexes.

### Philothalpus.

The species referred to this genus are at present nine in number, and are confined to South America; they were most of them known to Erichson, and divided by him among his genera *Staphylinus* and *Philonthus*. Three others, considered by me as new, are here added.

I have had great difficulty in dealing with this genus and its allies, *Gastrisus* and *Eugastus*, and feel far from satisfied with the course I have adopted. I would have preferred considering them all as one genus, containing a number of heterogeneous forms, but the characters on which the now accepted genera of the *Staphylinini* are based would not allow me to do this; to have dealt with them in a satisfactory manner would have necessitated a fresh regrouping of the South American *Staphylinini*, a step which is at present out of the question. On the other hand, to have gone backwards and applied to the whole of these insects the name *Staphylinus*, would, I think, have been too retrograde a step. Had there been in use a collective name to designate all those *Staphylinini* in which the lateral pieces of the thorax are not abbreviated, I would gladly have used it for all these insects; but such a name has never existed, for Kraatz, to whom we owe the indication of this very important character, when he pointed it out, at the same time distributed the species possessing it among a number of new genera, while the species I am here describing are, many of them, intermediate between the genera he then characterized.

The three species here described as appertaining to the genus *Philothalpus* differ considerably from one another in facies, and no doubt many entomologists would be inclined to consider them as belonging to three distinct genera.

1. *Philothalpus luteipes*, n. sp. Capite thoraceque obscure æneis; scutello, elytris, pectore abdomineque testaceo-ferrugineis, hoc segmentis 4—7 nigro-signatis; pedibus testaceis. Long. corp. $4\frac{1}{2}$ lin.

Mas: tarsis anticis dilatatis; abdomine segmento 7° ventrali medio triangulariter inciso.

Fem. tarsis anticis leviter dilatatis.

Antennæ about as long as the head and thorax, not thicker towards the extremity, blackish, the basal joints indistinctly paler, the last joint also obscurely paler; each joint longer than broad, 3rd considerably longer than the 2nd. Head as broad as the thorax, orbiculate, very closely and coarsely punctured, with an impunctate space in the middle; a broad depression between the antennæ, the punctured parts with stiff, outstanding setæ. Thorax rather longer than broad, a little narrowed behind, and the sides a little sinuate behind the middle, dull brassy

above, numerously and moderately coarsely punctured, with an impunctate line in the middle, the punctures with outstanding grey hairs. Scutellum tawny, closely and finely punctured. Elytra tawny, a little longer and much broader than the thorax, rather closely and finely punctured and with a concolorous pubescence. Hind body tawny, 4th segment slightly marked with black at the base, 5th and 6th broadly black at the base, basal half of the 7th yellow, extremity blackish, lateral lobes of the 8th segment blackish; the base of each segment is finely and moderately closely punctured, the extremity of each sparingly punctured; the upper surface with coarse black hairs, the basal part of the 7th segment without these hairs and scarcely punctured. Legs yellowish; basal joint of hind tarsi nearly as long as the three following together.

Pará; Ega, seven specimens.

*Obs.*—This species I anticipate will prove closely allied to *Staphylinus segmentarius*, Er.; indeed, I should have referred these individuals to that species had it not been that Erichson describes the apical segment of the hind body by the words "toto nigro," whereas in *P. luteipes* it is yellow, with the hind margin black. Erichson's locality for *S. segmentarius* is Columbia, and I have an individual of *P. luteipes* from Venezuela; should it prove that the words I have quoted from Erichson's description are erroneous, it may be probable that *P. luteipes* is conspecific with *S. segmentarius*.

2. *Philothalpus latus*, n. sp. Fulvus, capite antennisque nigris, his articulo ultimo ferrugineo; abdomine segmentis 2—5 late piceis. Long. corp. $5\frac{1}{2}$ lin.

Mas: tarsis anticis fortiter dilatatis; abdomine segmento sexto ventrali apice medio late emarginato, 7° triangulariter inciso.

Fem. latet.

Broader than usual in this genus. Antennæ nearly as long as the head and thorax, blackish, with the 1st one or two joints pitchy, and the last joint obscure reddish; 3rd joint considerably longer than 2nd, 4—10 each a little shorter than its predecessor, 4—6 longer than broad, 8—10 a little transverse, 7—10 each slightly produced on the inside; 11th joint sinuate and pointed at the extremity. Mandibles and palpi pitchy red. Head as broad as the thorax, black, scarcely brassy, coarsely and

irregularly punctured, an ill-defined space in the middle smooth, with a kind of triangular depression in front. Thorax narrower than the elytra, tawny, shining, a line in the middle smooth, the rest of the upper surface covered with rather fine and not close punctures. It is a little narrowed behind, but the sides are scarcely sinuate behind the middle. Scutellum moderately closely and finely punctured. Elytra tawny, a little paler than the thorax, finely and not closely punctured. Hind body above with segments 2—5 pitchy black, 6th and 7th yellow, hind part of the styles on the 8th black; segments 2 – 6 finely and not densely punctured, 7th very finely and sparingly punctured at the base, more coarsely on the hind part. Legs yellowish.

In the male the front tarsi are broadly dilated; the hind margin of the 6th segment of the hind body is broadly and shallowly emarginate in the middle, and the 7th segment has a triangular notch.

St. Paulo; one ♂ individual.

3. *Philothalpus incongruus*, n. sp. Fulvus, nitidus, capite brevi, nigro sub-æneo, oculis magnis; antennis, basi excepto, fuscis; abdomine segmentis 2—4 sine lineis curvatis impressis, segmentis 5 et 6 leviter infuscatis. Long. corp. 4 lin.

Mas latet.

Fem. tarsis anticis haud dilatatis.

Antennæ about as long as head and thorax, moderately stout, a little thickened towards the extremity, four or five basal joints dusky fulvous, the rest infuscated; 3rd joint rather longer than 2nd, 4th a little shorter than 2nd; from this to the 10th each joint shorter and stouter than its predecessor, 5th longer than broad, 9th and 10th a little transverse, 11th about twice as long as the 10th, pointed. Mandibles short, palpi pitchy. Head about as broad as the thorax, broad and short, shining and blackish except behind the labrum, where it is reddish; it is covered with large punctures, except in the middle, where it is smooth; the eyes are large and prominent and extend very nearly to the back of the head. The thorax is about as long as broad, rather narrowed behind, the anterior angles deflexed and a little rounded, the sides a little sinuate behind the middle; it is of a shining tawny colour, the upper surface covered with numerous but not coarse

punctures, leaving a central line smooth. The scutellum is large, densely and distinctly punctured. The elytra are about as long as, and rather broader than the thorax, of a tawny colour, moderately closely and rather finely punctured. The hind body is rather narrowed to the extremity, of a tawny colour, the 5th and 6th segments darker and the 7th yellowish; segments 2—4 finely and rather closely, 5th and 6th densely and finely, 7th very sparingly and finely punctured. Legs yellowish.

Ega; one specimen.

*Obs.*—This species differs from *segmentarius* and its allies, in that the curved impressions on the basal segments of the hind body are so obsolete that they might almost be correctly described as absent. The insect differs, however, from *Eugastus* completely in its facies, and can therefore scarcely be considered intermediate between it and *Philothalpus*.

### Gastrisus, n. gen.

Ligula integra.

Palpi labiales articulo ultimo suboblongo, apice truncato; maxillares articulo ultimo præcedente longiore, apice acuminato.

Thorax lineis marginalibus lateralibus utrinque haud conjunctis, lateribus membranâ stigmaticâ instructis.

Abdomen segmentis 2 et 3 sine lineâ incurvatâ.

Genus *Philonthi* staturâ similis, sed prothoracis lineis lateralibus haud conjunctis, lateribus pone coxas membranâ instructis, differt. Generis *Philothalpi* quoque affinis, sed ab illo, prothoracis membranâ stigmaticâ, abdomineque sine lineis incurvatis, discedit. Generis typus *G. lævigatus*.

The three new species I refer to this genus are very discrepant by their sculpture; *G. obsoletus* and *G. lævigatus* are peculiarly smooth, while *G. punctatus* is remarkable for its coarse sculpture. *G. obsoletus* and *lævigatus* may possibly prove to be only one species; they suggest, at first sight, a comparison with *Quedius*, but differ therefrom by the less abruptly-inflexed lateral pieces of the thorax. *G. punctatus* has quite the facies of a diminutive *Philonthus analis*, Er.

1. *Gastrisus obsoletus*, n. sp. Rufo-testaceus, antennis nigris, basi piceo, capite æneo; thorace disco fusco-æneo;

elytris opacis, obsolete parceque punctatis; abdomine segmentis basalibus medio infuscatis, parce punctatis. Long. corp. 4½ lin.

Mas: tarsis anticis sat dilatatis, abdomine segmento 7° ventrali apice medio minus profunde exciso.

Antennæ short and moderately stout, blackish; 1st joint pitchy, the extreme base of each of the following joints reddish; 3rd joint longer than 2nd, 4th rather longer than broad, 8—10 rather strongly transverse; palpi reddish. Head brassy, moderately shining, with two punctures behind the labrum, each placed in a depression, with two or three along the margin of the eye, and some others at the extreme hind angles; all the middle part impunctate; it is distinctly narrower than the thorax. Thorax distinctly longer than broad, a good deal narrower than the elytra, along the middle of an obscure æneous colour, the sides and base yellowish; it is distinctly sinuate at the sides and a little narrowed behind; on each side the middle, at some distance from the front, is a single puncture, and two or three others at each front angle, elsewhere impunctate. Elytra not longer than the thorax, of a yellow colour, opaque, sparingly and very obsoletely punctured, and with scanty fine hairs. Hind body yellowish, with the middle of the basal segments infuscate, sparingly and finely punctured, and scantily pubescent, at each hind angle of each segment with a long black seta; anal styles tawny yellow. Legs yellow, with concolorous spines; basal joint of hind tarsus as long as the three following together.

In the male the front tarsi are moderately dilated and furnished beneath with pale pubescence; the hind margin of the ventral plate of the 7th segment bears a small notch in the middle.

A single specimen was brought back by Mr. Bates without any special indication of its locality.

2. *Gastrisus lævigatus*, n. sp. Subdepressus, rufo-testaceus, capite supra æneo-micante, antennis fuscis. Long. corp. 5 lin.

Mas latet.

Fem. tarsis anticis sat dilatatis.

Antennæ shorter than the head and thorax, moderately stout, the basal joint pitchy red, the rest fuscous; 3rd joint a little longer than 2nd; 4th and 5th each about as long

as broad, 6th transverse; from this to the extremity no broader: joints 7—10 rather strongly transverse; 11th joint rather short, sinuate and pointed at the extremity. Mandibles and palpi reddish. Head nearly as broad as the thorax, above brassy and smooth, with two punctures in the front behind the labrum, and several large and smaller punctures behind the eyes. Thorax reddish, about as long as broad, but little narrowed behind; the sides slightly rounded in front, and a little sinuate behind, smooth and impunctate, with the exception of a puncture on each side behind the neck and two or three others near the front angles. Scutellum obsoletely punctured. Elytra yellowish, about as long as the thorax, dull, obsoletely and very sparingly punctured. Hind body yellowish, the basal segments a little infuscated in the middle, rather finely and rather sparingly punctured. Legs yellow; tarsi rather slender.

Ega; one specimen, ♀.

*Obs.*—This is very closely allied to *G. obsoletus*, but is a little larger, and has the thorax unicolorous; the head is rather larger and a little more elongate, so that the punctures at the hind angles are rather more numerous and more conspicuous.

3. *Gastrisus punctatus*, n. sp. Capite, prothorace, elytrisque obscure cyaneis; abdomine nigro, apice flavo; antennis pedibusque nigro-fuscis. Long. corp. 4½ lin.

Mas: tarsis anticis minus dilatatis; abdomine segmento 7° ventrali apice medio late triangulariter emarginato.

This insect is remarkable by the deep and close punctuation of the fore parts, in opposition to the very fine sculpture of the hind body. The antennæ are shorter than the head and thorax, moderately stout, blackish; 3rd joint considerably longer than 2nd; from this to the extremity very slightly thickened; 4—6 each about as long as broad, 7—10 a little transverse; 11th joint moderately long and pointed. Mandibles and palpi pitchy. Head rather small, a little narrower than the thorax, above bluish-green, closely, deeply and coarsely punctured, with a well-limited quadrate space on the middle impunctate. Thorax rather longer than broad, a little narrowed behind and slightly sinuate at the sides; the whole upper surface deeply, closely and evenly punctured, with a narrow impunctate line along the middle. Scutellum large, densely

punctured. Elytra about as long as, and a good deal broader than the thorax, of a dull greenish colour, closely and deeply punctured, the punctures being much finer than on the head and thorax. Hind body not much narrowed at the extremity, black, with the hind margin of the 6th and the whole of the 7th segment bright yellow. It is very finely and rather closely punctured. Legs pitchy black.

St. Paulo; one specimen, ♂.

EUGASTUS, n. gen.

Antennæ sat longæ, filiformes, articulo ultimo apice obliquo.

Palpi filiformes, articulo ultimo præcedente longiore.

Thorax lineis lateralibus haud conjunctis, sine membranâ stigmaticâ.

Abdomen segmentis 2—4 sine lineis transversis incurvatis; segmentis 2 et 3 basi utrinque lineâ brevi obliquâ impressis.

Tarsi intermedii et postici graciles, articulo primo lineari, elongato.

Labrum medio incisum. Mandibulæ breves. Palpi maxillares articulo ultimo apice acuminato, labiales articulo ultimo lineari. Pedes graciles. Habitu *Staphylino* et *Philontho* quasi intermedium.

Locus systematicus prope genus *Philothalpum*.

This genus is undoubtedly very close to *Philothalpus*, but as Kraatz specially bases that genus on the curved lines of the hind body, and as these insects do not exhibit that character, and as they present a facies strikingly peculiar, I have decided on giving a new generic name, though with much hesitation.

1. *Eugastus bicolor*, n. sp. Rufo-ferrugineus, elytris cyaneo-nigris; abdomine minus nitido, segmentis 4—6 late infuscatis, 7° apice fusco. Long. corp. 6¼ lin.; lat. (elytrorum) 1⅓ lin.

Mas: tarsis anticis leviter dilatatis; abdomine segmento 7° ventrali margine apicali medio leviter emarginato.

Narrow and elongate, the front parts dull, and only the hind body somewhat shining. The antennæ are rather slender, not quite so long as head and thorax, scarcely thicker towards the extremity. The three basal joints reddish, the rest pitchy; 3rd joint one and a half times the length of the 2nd; from 4—10 each is a little shorter

than its predecessor; 4th joint much longer than broad, 10th about as long as broad; last joint about as long as the 4th, pointed on one side. Parts of the mouth red. Head as broad as the thorax, orbiculate; the eyes large, above red and opaque, with numerous very obsolete punctures, each bearing a fine upright hair; beneath smooth and shining, with a few very fine punctures. Thorax a little narrower than the elytra, the length one and a half times the width, narrowed behind, transversely very convex at the front angles, which are very rounded, the sides a little sinuate behind, the hinder angles quite rounded; above it is of a very dull-reddish colour, extremely obsoletely punctured, but with a rather coarse and evenly distributed black pubescence. Scutellum very densely pubescent. Elytra scarcely the length of the thorax, of an obscure dull-bluish colour, with an obsolete but rather rugulose sculpture. Hind body slender and elongate, a little narrowed towards the extremity, of a reddish colour; a large part of the 5th and 6th segments pitchy, the extremity of the 7th also dark, and the basal segments are also a little infuscate at the extreme base; the segments are moderately coarsely but not closely punctured; the hind half of the 6th and the basal part of the 7th very finely and sparingly punctured, the styles of the 8th segment blackish. The legs are reddish-yellow and rather long, the hind tarsi long and slender, the basal joint about twice the length of the second.

St. Paulo; one specimen, ♂.

2. *Eugastus mundus*, n. sp. Opacus, fulvus, antennis basi excepto nigris, elytris viridi-opacis, dense punctatis; abdomine nigro-fulvoque variegato, dense punctato. Long. corp. 7 lin.

Antennæ with the three basal joints red, the rest blackish; joints 4—10 each distinctly shorter but scarcely broader than its predecessor; 4th a good deal longer than broad, 10th scarcely so long as broad. Head rather narrow, with the eyes very large, of a tawny-red colour, dull, covered with an obsolete punctuation, and with a fine scanty golden pubescence. Thorax elongate, similar in colour to the head, very dull, very obsoletely punctured, and with a fine, very depressed, reddish pubescence. Scutellum velvety-black. Elytra as long as the thorax, of a dull-greenish colour, the basal part of their inflexed

portion reddish; they are densely and rather coarsely punctured, the punctuation being confluent and rough. Hind body with the basal segments blackish, but their hind portions tawny; 5th segment entirely black; 6th black, but with the hind margin broadly and abruptly yellowish; 7th yellowish, with its hind margin black; anal styles black. Legs tawny yellow.

A single female of this remarkable species was found by Dr. Trail at Lages, near Manaos, on the 5th January, 1875. A very mutilated individual of the same sex was also sent by Mr. Bates, but without any indication of locality.

*Obs.*—This species may be readily distinguished from *E. bicolor*, by its larger size, broader form, and shorter-jointed antennæ, as well as by the more densely punctured elytra and hind body; the two females have the front tarsi distinctly dilated, but scarcely so broad as in *E. bicolor*, ♂.

ISANOPUS, n. gen.

Antennæ tenues, elongatæ.

Palpi filiformes, elongati, maxillares articulo ultimo præcedente duplo longiore.

Thorax lineis lateralibus haud conjunctis, sine membranâ stigmaticâ.

Abdomen segmentis 2—4 sine lineis incurvatis.

Tarsi antici dilatati, intermedii et posteriores articulis 2—4 sublobatis.

Labrum medio incisum. Mandibulæ breves, acutæ; tibiæ posteriores tarsis fere duplo longiores.

Genus præcedenti affinis, differt palpis longioribus tarsorumque structurâ aliâ.

The insect to which I apply this new name is remarkable for the structure of the four posterior tarsi; these have joints 2—4 somewhat lobed and dilated, the dilatation being chiefly on their inner sides, so that each of these joints is unsymmetrical in shape.

1. *Isanopus tenuicornis*, n. sp. Niger, nitidus, elytris obscure cyaneis, antennis articulis 4—11 testaceis, abdomine apice rufo-testaceo. Long. corp. 6 lin.; lat. (elytrorum) $1\frac{1}{3}$ lin.

Mas latet.

Femina tarsis anticis dilatatis.

About similar in size to *Philonthus cribratus*, but less

depressed, and with the hind body narrower. The antennæ are longer than the head and thorax, slender, not in the least thickened towards the extremity; the three basal joints are pitchy, the others pale yellow; the 3rd joint is longer than the 2nd, 4th about as long as the 2nd; from this to the extremity the joints differ but little from one another; 11th joint rather shorter than the 10th, its length two or three times its breadth. Mandibles and palpi pitchy red. Head about the width of the thorax, suborbicular, covered with numerous closely placed, large punctures, except the disc and a transverse space behind the labrum, which are free from punctures. The eyes rather large. Thorax nearly one and a-half times as long as broad, narrowed behind; the front angles much deflexed and rounded, strongly sinuate at the sides; the hinder angles obtuse and rounded, the upper surface with two irregular lines of large punctures along the middle, leaving a broad space between them impunctate, and with numerous other large punctures at the sides, scarcely leaving the two middle lines of punctures distinct from the others, the punctures more numerous about the front than at the hinder part. Scutellum black, large, densely and distinctly punctured. Elytra about as long as the thorax, and considerably wider, dark bluish, rather roughly and moderately closely punctured. Hind body elongate, a little narrowed to the extremity, black, with very faint bluish reflections; the 6th segment reddish, the 7th yellow; the base of each segment is closely and finely punctured, the apex more sparingly; the hind part of the 6th and the whole of the 7th segment finely and sparingly punctured. Legs black, rather long, the hind tibiæ especially long; the four hinder tarsi with the joints a little dilated and uneven; the 1st joint rather stout and nearly linear, about as long as the two following together; the second joint triangular, the internal angle more produced than the outer one; 3rd joint only half as long as the second, distinctly lobed, especially on the inner side; 4th joint rather narrower than, but nearly as long as the 3rd, its outer angle distinctly produced; the tarsi are pitchy, their terminal joints reddish.

Ega; one specimen, ♀.

### Trigonopselaphus (*Trigonophorus*, Nord.).

This genus is also peculiar to South America; it consists at present of about a dozen species; some of its

species are amongst the most brilliant of natural objects. Kraatz has remarked that the species fall into three distinct groups, adding, that it will be well to leave them together in one genus till more species are known. The species I here describe as *T. mutator* adds yet another form to those previously included under this generic name. It is well to add, to prevent misconception, that though the dilated terminal joint of the labial palpi is given as one of the most important characters of the genus, *S. venustus* and *violaceus* have that joint quite simple, and are allied to the *Philonthus pretiosus*, Er., in this respect.

1. *Trigonopselaphus opacipennis*, n. sp. Capite thoraceque viridibus, nitidis; elytris obscure ænescentibus, opacis; abdomine opaco, nigro, apice rufo-testaceo; antennis pedibusque nigris, illis articulo ultimo ferrugineo. Long. corp. 9 lin.

Antennæ the length of the head and half the thorax, not thickened towards the extremity, black, with the 10th joint pitchy and the 11th dull yellowish; 3rd joint considerably longer than the 2nd, quite twice as long as the 4th; from the 4th to the 10th each a little shorter than its predecessor; 10th joint about as long as broad, the others longer than broad; 11th joint about as long as the 9th, its extremity rounded, but pointed on one side. Palpi pitchy; mandibles black. Head scarcely as broad as the thorax, rather quadrate, above shining green, with large, coarse punctures irregularly scattered, but leaving a rather broad irregular space, extending from the labrum to the neck, free; below black and dull. Thorax a little narrower than the elytra, rather longer than broad, very slightly narrowed behind, with the sides but little sinuate on the upper side, with two lines of about eight punctures, with a rather broad space between them, and besides these with about twenty other punctures on each side near the front part and the outsides; it is of a shining, bluish-green colour; the margins below black and provided with a stigmatic membrane. Scutellum large, black, dull, very obsoletely and sparingly punctured. Elytra about as long as the thorax, of a dull black colour with a slight metallic tint, with a very peculiar sculpture consisting of large shallow punctures, placed at a good distance from one another, and with faint, irregular, wandering lines between them. The hind body is narrowed towards the extremity;

it is of a dull black colour, with the hind margin of the 6th segment, as well as the whole of the 7th and 8th, dull-orange colour, it is sparingly punctured, the punctures more numerous on the 6th segment than elsewhere, and each bearing a rather stout hair. Legs dull blackish.

St. Paulo; one specimen, ♀.

2. *Trigonopselaphus mutator*, n. sp. Niger, antennis piceis, capite thoraceque viridi-cyaneis, elytris æneis fortiter punctatis; abdomine nigro-æneo, apice testaceo. Long. corp. 5½ lin.

Antennæ short and rather stout, 1¼ lin. in length, of an obscure-reddish colour; 3rd joint about as long as 2nd, 4th — 10th each a little shorter than its predecessor, each much narrowed towards the base, especially on its inner side; the 4th about as long as broad, 8—10 rather strongly transverse, 11th rather short, acuminate, its apical portion yellowish, being paler than the basal portion. Palpi blackish, the maxillary ones slender; the last joint of the labial much dilated, the middle joint not so long as broad. Mandibles short, very thick, but at the extremity slender and very acuminate; labrum large, quite bifid, pitchy. Head small, a good deal narrower than the thorax; the eyes large and occupying most of the side; the vertex very truncate, so that the neck is abrupt and rather slender; it is of a greenish-blue colour, not much shining; it is coarsely punctured, the punctures absent about the middle; on the underside it is black, shining and impunctate, and the genæ are distinctly margined. Thorax distinctly narrower than the elytra, about as long as broad, truncate in front, rounded at the base, the sides a little curved; it is similar in colour to the head, and is coarsely and sparingly punctured, the punctures being absent from a space along the middle. Scutellum large, dull blackish, rather coarsely punctured. Elytra slightly longer than the thorax, of a shining-brassy colour, coarsely punctured, and only sparingly pubescent. Hind body blackish, with the 7th segment and the hind margin of the 6th yellow; the basal segments rather brassy, the 5th and 6th very densely punctured and clothed with a remarkably dense, coarse, black pubescence, the basal segments more sparingly punctured; the anal styles nearly black except at the base. Legs black, with the tibiæ and tarsi pitchy; the front tibiæ broad, their tarsi strongly dilated; hind

tarsi moderately long, their basal joint rather longer than the three following together.

Pebas; a single female, collected by Mr. Hauxwell.

*Obs.*—This is a very remarkable species, and one which has at first sight the facies of the *Xanthopygi* with metallic elytra; but the labial palpi, and the absence of a stigmatic membrane to the thorax, forbid its being associated with them. I have thus been compelled either to establish a new genus for it, or to call it a *Trigonopselaphus*, and I have preferred the latter course, as that name has already scarcely any definite meaning, owing to the heterogeneous nature of the few species associated under it.

3. *Trigonopselaphus violaceus*, n. sp. Violaceus, opacus, antennis pedibusque nigris, elytris sparsim fortiter punctatis. Long. corp. 9 lin.

Mas: tarsis anticis sat dilatatis, abdomine segmento 6° ventrali apice medio leviter emarginato, 7° late minus profunde inciso.

N.B.—Hac specie palpi labiales articulum ultimum haud dilatatum, apice truncatum præbent; tarsi postici articulum primum elongatum, ceteros breves.

Antennæ nearly as long as head and thorax, rather slender, not in the least thickened towards the extremity; they are blackish, the three basal joints indistinctly violet; 3rd joint long, one and a half times the length of the 2nd, 4th not quite so long as 2nd; from 5—10 each is a little shorter than its predecessor, the first of them much longer than broad, and even the last longer than broad; 11th joint rather longer than the 10th. Mandibles black; palpi pitchy, last joint of the maxillary twice as long as the preceding one. Head rather narrower than the thorax, a little narrowed to the front; the eyes moderately large, extending quite half-way to the back of the head; above it is of a beautiful dull-violet colour, and has a few large punctures scattered irregularly over it. The thorax is considerably longer than broad, the sides slightly sinuate behind the middle, and a little narrowed towards the front angles, so that it is scarcely broader at the front than at the hind angles; it is similar in colour to the head, and has two lines formed of three or four indistinct punctures along the middle, and a few other punctures near the front part. The scutellum is large, blackish, sparingly and ob-

soletely punctured. The elytra are about as long as the thorax, very dull, of a blackish colour with a slightly violet tinge, covered with rather large and deeply impressed but distant punctures. The hind body is distinctly narrowed towards the extremity; it is of a dull-violet colour on the upper side, and is sparingly but distinctly punctured. The legs are blackish; the basal joint of the posterior tarsi as long as the three following together. The under surface of the insect is of a dull-blackish colour faintly tinged with violet; the margins of the thorax without stigmatic membrane.

Ega; one specimen, ♂.

4. *Trigonopselaphus venustus*, n. sp. Violaceus, sat nitidus, antennis nigris articulis nullis transversis. Long. corp. 12 lin.

Mas: abdomine segmento 6° ventrali apice medio leviter emarginato, 7° minus profunde exciso, 8° lobo medio apice leviter emarginato.

Closely allied in structure to *Philonthus pretiosus*, Er., and belonging really to the same genus. Antennæ not quite so long as the head and thorax, not thickened towards the apex; 2nd joint long, but shorter than the 3rd; 4th joint twice as long as broad, 10th longer than broad, 11th rather longer than 10th, pointed on one side; they are black, with the basal joints violet. Mandibles black, violet at the base. Head a little narrower than the thorax, not rounded at the sides, on the upper side of a beautiful violet colour, irregularly sprinkled with large punctures, the central part being free. Thorax longer than broad, much narrower than the elytra, the sides a little narrowed at the front and sinuate behind the middle; above similar in colour to the head, and with an irregular dorsal row of ten or eleven punctures on each side the middle, and also with other scattered punctures near the front. Scutellum moderately closely and rather obsoletely punctured. Elytra scarcely longer than the thorax, of a dark-violet colour, rather finely and closely punctured. Hind body distinctly narrowed to the extremity, of a greenish-violet colour, rather sparingly and finely punctured, the punctures evenly distributed. Legs greenish-violet; the front tarsi dilated in both sexes, the basal joint of the hind tarsus not greatly longer than the 2nd.

Ega and Tapajos; three specimens.

*Obs.*—*Philonthus cyanescens*, Guérin, is an ally of this species, but is very much smaller and has the antennæ much more slender.

### Glenus.

This genus appears to me one of the most distinct of the subfamily *Staphylinini;* the elongate terminal lobe of the maxillæ, and the mandibles, which though elongate are but little curved, taken in conjunction with the subapproximate antennæ, and the peculiar form of the front of the head, give it a peculiar isolation. It consists at present of five species, four of which were known by Erichson, and assigned by him to his genus *Staphylinus*, and it is to Kraatz that we owe the establishment of the genus.

I here describe four new species, two of which are very closely allied to others already known, while the other two, *G. amazonicus* and *G. vestitus*, form a distinct section by reason of the unrounded sides of the thorax.

1. *Glenus Kraatzi*, n. sp. Rufo-testaceus, thorace cupreo, nitido; elytris aureo-tomentosis, fasciâ mediâ ad suturam abbreviatâ fuscâ; abdomine nigro, segmentis singulis apice rufis. Long. corp. 12 lin.

This species is so closely allied to *G. biplagiatus*, that it is only necessary to point out its distinctive characters. The punctuation of the head behind the eyes is less close. The thorax has the hinder angles less completely rounded off, and is a little more sinuate at the sides; the impunctate medial line is broader, and extends quite to the front of the thorax; its punctuation is less dense, and the small punctures mixed with the large ones in *biplagiatus* are in *Kraatzi* nearly absent. The 3rd segment of the hind body is without the transverse curved line which is apparent in *biplagiatus*, and the colouring of the 4th and 5th segments is different; in *biplagiatus* the black marks thereon consist of a central spot and another on each side, these being united at the base, but distinctly recognizable; in *Kraatzi* these spots are replaced by a broad, transverse band, but slightly sinuate behind.

Ega; one specimen, ♀.

*Obs.*—I have much pleasure in dedicating this fine species to the learned author of the second volume of the "Insecten Deutschlands," and the founder of the genus to which the species belongs.

2. *Glenus Batesi*, n. sp. Rufus, capite rufo-testaceo, thorace elytrisque sanguineo-tomentosis, abdomine nigro-subæneo, segmentis singulis transversim vix sinuatim rufo-marginatis, crebre subtiliter punctatis. Long. corp. 13 lin.

Closely allied to *G. Chrysis*, Grav., but distinguished therefrom by the redder colour of the pubescence on the thorax and elytra, and by the much more closely and finely punctured hind body; the transverse red markings of segments 3—5 are nearly straight.

Tapajos; two specimens.

*Obs.*—I have also an individual of this fine species in my collection, labelled "Brazil." A fully extended large individual attains sixteen or seventeen lines of length.

3. *Glenus amazonicus*, n. sp. Opacus, pube aureo subtili parcius vestitus, capite rufo-testaceo, thorace sericeo-æneo; elytris obscure violaceo-brunneis, ad latera maculâ nigrâ notatis; abdomine rufo-brunneo, maculis fasciâque nigro-æneis. Long. corp. 9 lin.

Antennæ a little shorter than head and thorax; 3rd joint considerably longer than 2nd; 7th joint a little transverse, 8—10 distinctly so; 11th joint truncate and sinuate at the extremity; they are of an obscure-reddish colour, darker towards the extremity, but with the last joint again a little paler. Mandibles reddish at the base, black towards the extremity; palpi reddish. Head dull reddish, obscurely metallic between the antennæ, above rather convex; sparingly and very finely punctured, with a fine golden pubescence. Thorax much narrower than elytra, considerably longer than broad, distinctly narrowed behind, the front angles rounded and much deflexed, the sides a little sinuate; above it is of a very dull-brassy colour, with a very silky lustre; it is sparingly and very obsoletely punctured, with a fine golden pubescence, apparently very easily removed. Scutellum black, dull and velvety. Elytra not longer than the thorax, of a peculiar dull-reddish colour, with a violet tinge, at the outside with a blackish, ill-defined mark; not visibly punctured, and with a scanty, depressed, golden pubescence, apparently very easily removed. Hind body narrowed to the extremity, of a reddish colour, marked with black, of a faint brassy tinge; 2nd segment nearly entirely black, 3rd with a broad mark in the middle and a small one on each side, 4th and 5th each with a mark in the middle reaching the

hind margin, but not the extreme base; 6th brassy black, reddish at the base, 7th entirely yellowish: it is sparingly and rather finely punctured, the red parts with golden hairs, the black parts with blackish hairs. Legs yellowish-brown.

Ega; two specimens, ♀.

4. *Glenus vestitus*, n. sp. Obscure rufus, pubescentiâ rufâ vestitus, capite testaceo, subtiliter aureo-tomentoso, inter antennas ænescente; abdomine segmentis longitudinaliter æneo-lineatis. Long. corp. 10 lin.

Mas: segmento 6° ventrali medio fasciculâ parvâ pilorum longorum, margine apicali medio leviter emarginato, 7° apice medio late satque profunde inciso.

Antennæ long and slender for this genus, nearly as long as head and thorax, of a dull-reddish colour; 3rd joint longer than 2nd, none of the joints transverse, 10th about as long as broad, 11th about as long as 10th; the extremity truncate, with the internal angle much produced. Palpi yellowish; mandibles red at the base, pitchy black towards the extremity. Head yellowish, with a metallic mark in front between the antennæ; it is about as broad as the thorax, rather convex above, and clothed with a very fine but rather dense golden pubescence. Thorax considerably narrower than the elytra, rather longer than broad, a little narrowed behind, the anterior angles not much deflexed, and but little rounded; the sides slightly sinuate, the hind angles obtuse; it is covered above with a dense ferruginous-red pubescence, and has at the anterior angles seven or eight long erect, setæ. Scutellum densely clothed with black velvety pubescence. Elytra about as long as the thorax, densely covered with a reddish pubescence, hiding their colour and sculpture. Hind body narrowed towards the extremity, reddish, with a brassy line along the middle, formed by an elongate spot down the middle of each segment; it is closely and finely punctured, and rendered dull by a dense, depressed, concolorous pubescence. Legs yellowish; tarsi pitchy. Breast clothed with golden pubescence.

In the male the 6th segment of the hind body beneath has a very short line of long, erect hairs, and the hind margin is a little emarginate; the 7th segment has a broad and rather deep notch in the middle of the hind margin.

Pará, Ega, St. Paulo; three specimens ♂, one ♀.

### Leistotrophus.

This genus consists of a few species, but is of very wide distribution. South America possesses but a single species, which, however, is the most developed and remarkable of the genus. The two species described by Motschoulsky under the generic name of *Trichoderma*, which, in the Munich Catalogue, are recorded as South American species of *Leistotrophus*, belong clearly, from Motschoulsky's description, to the genus *Staphylinus*.

1. *Staphylinus versicolor*, Grav.

Pará, Ega, Tapajos.

One of the individuals is labelled as found in cow-dung; the species, like its European congeners, frequents, no doubt, putrescent substances for predaceous purposes.

### Staphylinus.

I have used this name with the same extension as that given to it in the Munich Catalogue of Coleoptera, where it includes about 100 species, found in all parts of the world. It is a genus of which the species are extremely closely allied, but yet, studied on the European ones, have proved to be incontestably distinct. The exotic species are probably extremely numerous, and their discrimination will be no easy task. I here enumerate nine species from the Amazon Valley, seven of which I have described as new; of these the first two, viz., *S. subcyaneus* and *S. parviceps*, are quite distinct, by their combinations of colour and sculpture, from any others I am acquainted with. The same remark applies to *S. gratiosus* and *S. gratus*, but *S. priscus* and *S. vetustus* are very closely allied to the *S. antiquus* and some other undescribed South American forms, and thus appertain to what is undoubtedly a most difficult group; while the *S. amazonicus* perhaps finds its nearest ally in the North American *S. tomentosus*. It is worthy of notice that Mr. Bates brought back nothing to represent the very remarkable *S. Buquetii* group, of which species are found in Mexico, Peru and Brazil; it will be remarkable if no allied species is found in the Amazon Valley, and yet so large and striking are they, that if present one would think they would scarcely have been neglected by Mr. Bates during the whole of his long residence there.

1. *Staphylinus subcyaneus*, n. sp. Niger, capite thoraceque nigro-cyaneis, abdomine segmentis duobus ultimis flavis, antennis rufo-testaceis. Long. corp. 8 lin.

Mas: abdomine segmento 7° ventrali apice emarginato.

About the size of *S. chalcocephalus*, but with the head smaller. Antennæ about the length of the head and one-third of the thorax; they are of a yellowish colour; 3rd joint longer than 2nd, 4—10 transverse, differing but little from one another, 11th sinuate and acuminate at the extremity. Mandibles pitchy; palpi yellow. Head smaller than the thorax, narrowed in front, blackish-blue, moderately coarsely and moderately closely punctured, clothed with a fine pubescence. Thorax not quite so long as broad, a little narrowed towards the front, the sides straight, the base and hind angles rounded, above of an obscure-bluish colour like the head, neither very closely nor coarsely punctured, with a short smooth line in front of the scutellum, and clothed with a dark fuscous pubescence. Elytra about as long as the thorax, dull bluish-black, rendered black and opaque by a fine depressed pubescence, under which they are alutaceous but not punctured. Scutellum clothed with black pubescence. Hind body narrowed towards the extremity, quite dull and densely clothed with a very fine concolorous pubescence, black, with the 6th and 7th segments yellow. Legs black, tibiæ strongly spinulose.

Ega and Tunantins; two specimens, ♂ and ♀.

2. *Staphylinus parviceps*, n. sp. Opacus, niger, antennis rufis, capite thoraceque subcyaneis, abdomine segmentis 6°, 7°que late testaceis, 6° basi nigro; abdomine tomento haud variegato. Long. corp. 7 lin.

Mas: abdomine segmento 7° ventrali apice medio leviter emarginato.

Antennæ short, reddish, with the basal joints yellow; 3rd joint scarcely longer than 2nd, 4—10 transverse, 6—10 scarcely at all differing from one another either in length or breadth. Mandibles pitchy red; palpi yellow. Head a good deal narrower than the thorax, subtriangular, the punctures only moderately coarse, those on the anterior part not dense; it is of a black colour, with a pale blue reflection and very slightly shining. Thorax just as long as broad, nearly as broad as the elytra, slightly narrowed in front, covered with a rather coarse but not deep

punctuation, which is close, but the interstices are quite distinct and not at all rugose; its depressed pubescence is of a dark colour, but not altogether black; in colour it is similar to the head. The elytra are just as long as the thorax, and are covered with a blackish tomentum, which makes them appear quite dull and without sculpture, and they bear besides a rather close depressed pubescence. Hind body black, with the two apical segments bright yellow, but the base of the 6th black; the black part is covered with a dense dark tomentum, which is quite unicolorous; the anal styles are yellow. The legs are short and stout, black. The under face of the hind body is distinctly punctured, and bears a rather scanty yellow pubescence; it has a slight metallic reflection.

Ega; seven individuals.

*Obs.*—I at first considered this species a variety of *S. subcyaneus*, but, after examination of a series of seven individuals, I consider it likely to prove a distinct species; it is considerably smaller, rather darker in colour, has the head smaller, and the basal portion of the 6th segment of the hind body black. The male characters appear very similar.

3. *Staphylinus ochropygus*, Nord. var.

Tapajos, Ega, St. Paulo.

I identify this species from the descriptions of Nordmann and Erichson; the specimens agree therewith except that they have the legs and antennæ paler in colour.

4. *Staphylinus gratiosus*, n. sp. Fulvus, capite thoraceque viridi-cyaneis, nigro-pubescentibus, scutello atro-tomentoso, abdomine aureo-tomentoso, antennis (basi excepto) infuscatis. Long. corp. 7½ lin.

Mas: abdomine segmento 7° ventrali apice medio late sed minus profunde emarginato.

A very pretty species, and remarkable for the peculiar sculpture of the head and thorax, the interstices of the coarse punctures thereon being finely punctured. Antennæ stout, about as long as head and one-third of thorax; the two basal joints dark yellowish, the others infuscate; 2nd and 3rd joints rather long, the 3rd longer than 2nd, 5—10 transverse; last joint truncate at the extremity and pointed on one side. Palpi yellowish; mandibles pitchy. Head narrowed in front, narrower than the thorax, shining

greenish, rather coarsely and sparingly punctured, with numerous fine punctures mixed with the large ones. Thorax nearly as long as broad, a little narrower than the elytra, distinctly narrowed in front, of a shining bluish colour, but dulled by a dark-fulvous pubescence which appears black in most lights; it is moderately coarsely and not densely punctured, fine punctures are distributed over the interstices of the larger ones. Scutellum densely clothed with black tomentum. Elytra about as long as the thorax, of a rich tawny colour, quite dull from a depressed tomentum, and furnished besides this with rather stiff depressed concolorous hairs. Hind body narrowed to the extremity, of a tawny-brownish colour, the segments furnished on the upper side with a rather scanty golden tomentum, and with rather numerous, stiff, concolorous hairs. Legs tawny yellow; front coxæ a little infuscate. The under surface tawny, with a scanty golden pubescence.

Ega; one specimen, ♂.

5. *Staphylinus gratus*, n. sp. Fulvus, capite thoraceque cyaneis, fulvo-pubescentibus, scutello fulvo-tomentoso, abdomine segmento sexto nigricante, apice segmentoque septimo testaceo. Long. corp. 7 lin.

Mas latet.

Allied to the preceding but very distinct. Antennæ longer than the head, the three basal joints tawny yellow, the rest infuscated; joints 2 and 3 rather short, 3rd longer than 2nd, 4—10 transverse, but the 4th narrower than the 5th; 11th joint sinuate at the extremity, one angle being pointed. Palpi yellowish. Head small, narrower than the thorax, much narrower than the elytra, narrowed in front, rather coarsely but not densely punctured, with a considerable impunctate space in the middle, shining blue, with a dark-reddish pubescence of erect hairs. Thorax about as long as broad, the sides a little arched and slightly narrowed in front, coarsely but by no means densely punctured, with a very narrow smooth line along the middle, shining blue, with a long, erect, reddish pubescence. Scutellum with a dense fulvous pubescence. Elytra scarcely so long as the thorax, dark tawny, clothed with a dense concolorous pubescence, and also with depressed fine hairs. Hind body narrowed to the extremity, reddish-brown; the 5th segment darker at the base, the

6th nearly black, but its hind margin and the 7th segment yellowish; it is above clothed with a nearly concolorous pubescence, which is arranged so as to make it appear indistinctly variegated, besides this with stiff reddish hairs, and on the 6th segment with black hairs. Legs reddish.

Tunantins; one specimen, ♀.

6. *Staphylinus amazonicus*, n. sp. Niger, opacus, nigro-tomentosus, scutello densius atro-tomentoso; abdomine supra bifariam nigro-maculato, segmentis singulis summo basi, medio maculâ cinereâ minus conspicuâ. Long. corp. 11 lin.; lat. (elytrorum) 2½ lin.

Mas latet.

Antennæ short and slender, rather longer than the head, black, with the extremity of the last joint rusty; 3rd joint long, one and a half times the length of the 2nd; joints 6—10 much narrowed to the base, but none of them transverse (in the ♀ at any rate). Mandibles black; palpi pitchy. Head smaller than the thorax, greatly narrower than the elytra, narrowed to the front, dull black, densely and moderately coarsely, but not deeply punctured, covered with a dense, fine and short, erect, black pubescence. Thorax narrower than the elytra, fully as long as broad, the sides nearly straight, not narrowed in front, but with the front angles deflexed and rounded; it is of a very dull black, densely and rather coarsely but very shallowly punctured, densely clothed with a pubescence similar to that of the head. Scutellum with a dense black velvety pubescence. Elytra slightly longer than the thorax, quite dull black, scarcely punctured but rugulose, covered with a concolorous pubescence. Hind body black; the sides of each segment with coarse shallow punctures; at the base of each segment is a middle spot of scanty yellowish or ashy hairs, on each side of which there is a velvety-black pubescence. The legs are black; the tibiæ and tarsi with rusty hairs. The wings dull yellowish.

Ega; one specimen, ♀.

*Obs.*—I regret that while mounting this insect I lost the 7th segment of the hind body (which had become detached). I cannot describe it fully but only say that it was quite black.

7. *Staphylinus antiquus*, Nord., Er.

Pará, Tapajos, Ega.

This appears to be one of the most widely distributed

of the South American species of *Staphylinus*. I have specimens which I consider conspecific with Amazonian ones, from Nicaragua, Columbia and Rio de Janeiro, as well as from intermediate localities.

8. *Staphylinus priscus*, n. sp. Capite thoraceque æneis, elytris obscure æneis, obsolete variegatis, abdomine tessellato, ano rufo-testaceo. Long. corp. 7 lin.

Mas: abdomine segmento 7° ventrali apice late sed haud profunde emarginato.

Closely allied to *S. antiquus*, Nord.; the thorax not longer than broad, not at all narrowed in front, the pubescence of the hind body darker, &c. It resembles *Ocypus cupreus*, but is a little broader and less elongate. Antennæ reaching half-way back the thorax; first three joints reddish, the rest nearly black; 2nd and 3rd moderately long, 3rd longer than 2nd; 4th joint narrower than the 5th, slightly transverse, 5—10 rather strongly so, 11th sinuate at the extremity and pointed on one side. Mandibles pitchy; palpi reddish. Head rather narrower than the thorax (smaller and more triangular in the ♀ than in the ♂), coarsely but not densely punctured, brassy, the interstices shining; a very small, narrow space in the middle free; clothed with a fuscous pubescence. Thorax but little narrower than the elytra, almost straight at the side, about as broad in front as behind, scarcely so long as broad; coarsely and closely punctured, with a line in front of the scutellum smooth, and with slight traces of the continuation of this in front; furnished with a dense and fine fuscous pubescence. Scutellum velvety black. Elytra about as long as the thorax, not so long as their breadth taken together, dull brassy; finely pubescent, and very indistinctly tessellated. Hind body narrowed at the extremity, pitchy in colour, the 7th segment yellowish; each segment has in the middle, at the base, an indistinct ashy mark, on each side of which the pubescence is more closely placed, so as to appear darker; besides this tomentum they are clothed also with numerous coarse hairs of a dark fuscous, nearly black colour. Legs pitchy red.

Ega; five specimens (♂ and ♀).

*Obs.*—Besides the above-mentioned five individuals, four others from the same locality represent, I believe, a variety; they are rather smaller, and have the head a little smaller, and the setæ of the hind body reddish. In another

individual from Pará the head and thorax are rather more sparingly and a little more coarsely punctured.

9. *Staphylinus vetustus*, n. sp. Niger, capite, thorace, elytrisque obscure æneis, his obsolete variegatis, abdomine supra tessellato, ano rufo-testaceo; thorace fere elytrorum latitudine. Long. corp. 7½ lin.

Mas: abdomine segmento 7° ventrali apice medio minus profunde emarginato.

Closely allied to the preceding; the head and thorax more densely punctured; the thorax both longer and broader, and the 3rd joint of the antennæ longer. Antennæ reaching nearly half-way down the thorax, pitchy; 2nd and 3rd joints rather long, 3rd considerably longer than 2nd; joints 4—10 differing but little from one another, transverse, but not strongly so; 4th joint sinuate at the extremity, and pointed on one side. Head small, narrower than the thorax, narrowed in front, dull brassy, closely and rather coarsely punctured, with a fuscous pubescence. Thorax scarcely narrower than the elytra, about as long as broad, very slightly narrowed in front, dull brassy, coarsely and very densely punctured, with a very short and very narrow smooth line in front of the scutellum, and clothed with a fuscous pubescence. Scutellum velvety black. Elytra about as long as the thorax, dull brassy, finely pubescent and indistinctly tessellated. Hind body narrowed to the extremity, pitchy; 7th segment and hind margin of the 6th yellow, obscurely tessellated, with a dark brown and scanty ashy pubescence, and besides this with coarse, nearly black hairs. Legs pitchy; femora marked with yellow towards the extremity.

Tunantins; one specimen; also four other individuals without special locality.

*Obs.*—This species is closely allied to *S. antiquus*, but is larger and broader; the legs, the antennæ and the pubescence are darker in colour; the antennæ are thicker, and the carina-like space along the head and thorax is absent.

## Belonuchus.

About thirty species are at present referred to this genus, and all of them are indigenous to its warmer parts, one or two extending their range to the United States of

North America. I here enumerate twelve species from the Amazons, of which nine are new.

The genus has no sufficient characters pointed out to distinguish it from the great genus *Philonthus;* Erichson was in doubt as to whether he should accept it as distinct therefrom, and indicated, as the only character peculiar to it, the arming of the front and hind femora with seta-like spines. This character, however, differs in certain species in the two sexes, as will be seen from my descriptions of *B. decipiens* and *B. setiger.* Species possessing this character are moreover by no means confined to the New World, for I have several undescribed *Philonthus*-like species displaying it from Papua and the Malay Archipelago. I have, therefore, only used this generic name as a matter of convenience, to avoid increasing the enormous number of species already registered under the generic name of *Philonthus.*

1. *Staphylinus hæmorrhoidalis,* Fab.

Pará, Ega, Pebas. Numerous specimens.

2. *Philonthus xanthopterus,* Nord.

Ega, St. Paulo. Also found at Barreiras de Janarape, Rio Solimoes, on the 9th January, by Dr. Trail.

3. *Belonuchus Batesi,* n. sp. Depressus, niger, nitidulus, abdomine dense punctato, apice rufo; prothorace serie dorsali 4-punctato. Long. corp. 4½ lin.

Mas: abdomine segmento 7° ventrali apice anguste triangulariter inciso.

Very similar in appearance to *B. hæmorrhoidalis.* Antennæ with the basal joint pitchy, the rest black, 3rd joint slightly longer than 2nd, 5—10 transverse, 5th broader than the 4th. Palpi pitchy. Head large, as broad as the elytra, black and shining, with a row of six punctures in front, placed one on each side, close to the eye, and two pairs near to each other in the middle, these separated by a depressed line; behind this front row of punctures is a second irregular row across the middle of the head, and there are also some other scattered punctures at the sides and back, but there is no raised line at the hinder angle. Thorax longer than broad, the front angles greatly depressed and rounded, the sides strongly sinuate, the base truncate, but the hind angles rounded, on each side

of the middle with a row of four punctures, and with a few other punctures scattered near the front angles. Scutellum thickly punctured. Elytra as long as the thorax, rather finely and closely punctured. Hind body narrowed towards the extremity; hind portion of the 6th and the whole of the 7th segment reddish; it is closely punctured, with the exception of the 7th segment, which is finely and sparingly punctured. The legs are black, the front and the hind femora spinous beneath.

Ega; one specimen, ♂.

4. *Belonuchus grandiceps*, n. sp. Rufo-testaceus, nitidus, capite abdomineque nigris, hoc apice flavo, antennis nigris, basi testaceo. Long. corp. 6 lin.

Mas: capite majore, clypeo sub-bidentato, abdomine segmento 7° ventrali, margine apicali, utrinque fortiter inciso.

Allied to *B. xanthopterus*, but with the thorax red instead of black. Antennæ with the three or four basal joints yellow, the rest black, the last joint rusty; 3rd joint rather longer than the 2nd, 6—10 transverse. Palpi yellow; mandibles red or pitchy red. Head black and shining, with a deep longitudinal impression in front, with numerous very coarse punctures behind the eyes, and with four or five near the inner margin of the eyes. Thorax reddish-yellow, narrower than the elytra, very slightly narrowed behind, and with the sides nearly straight; it is about as long as broad, and has on each side the middle a dorsal row of five punctures, the three middle ones approximated, and besides this with about six other punctures near the front angles. Scutellum reddish, closely punctured. Elytra about as long as the thorax, reddish-yellow, rather finely and moderately closely punctured. Hind body black, with the hind margin of the 6th and the whole of the 7th segment yellow; it is closely and distinctly punctured, and has a coarse black pubescence; the yellow portion is much more finely and sparingly punctured. The legs are yellow.

In the male the head is larger than the thorax, and the clypeus is obtusely elevated on the inside of the insertion of each antenna; the 7th segment of the hind body has a deep notch on each side of the middle of the hind margin; the anterior femora are obtusely dilated in the middle, and the hind femora are more strongly spinulose than in the female.

Ega; Tapajos, St. Paulo, five specimens, 3 ♂, 2 ♀.

5. *Belonuchus decipiens*, n. sp. Niger, nitidus, antennarum basi pedibusque piceis, ano late testaceo, prothoracis serie dorsali 5-punctato, abdomine crebre punctato. Long. corp. 5½ lin.

Mas: capite majore clypeo sub-bidentato, abdomine segmento 7° ventrali apice leviter emarginato, femoribus posticis subtus fortiter biseriatim spinosis.

Fem.: femoribus posticis uniseriatim setosis.

Antennæ blackish, with the two or three basal joints pitchy, and the last joint rusty; 3rd joint but slightly longer than 2nd, 4th quadrate, 5—10 transverse but not strongly so. Palpi reddish; mandibles pitchy. Head black and shining, with two points on each side between the eyes, and with several other coarse punctures on each side near the hind angles, the front portion with an impressed line extending half-way to the back. Thorax rather narrower than the elytra, quadrate, not or scarcely narrowed behind, the anterior angles a little depressed and rounded, the sides scarcely sinuate; it is black and shining, and has on each side a dorsal row of five punctures; of these the hinder one is placed at a distance from the others. The elytra are about as long as the thorax, shining blackish, rather finely and not closely punctured. The hind body is black, with the hind portion of the 6th and the whole of the 7th segment yellow; segments 2 and 3 are rather sparingly punctured, 4—6 more closely punctured and with a coarse black pubescence, 7th segment very finely and sparingly punctured. Legs pitchy.

The individual described above is a male (from Ega), and has the head rather larger than the thorax; the mandibles and palpi elongate, the clypeus obtusely projecting on each side between the insertion of the antennæ; the back part of the under face of the anterior femora dilated from the base to near the extremity, and furnished with short spines, the hind femora beneath with two rows of stout spines, and the hind margin of the 7th ventral segment of the hind body a little emarginate.

Ega; two males.

*Obs.*—A series of female specimens from Pará, Tapajos and Ega, are, I have no doubt, the other sex of this species. They have the head not broader than the thorax, the mandibles and maxillary palpi shorter, the clypeus simple, the front femora not dilated beneath, and the hinder femora destitute of the two rows of stout spines,

but furnished with a single row of fine setæ. A male individual from Pará agrees with the males from Ega, but has the antennæ a little stouter and the penultimate joints more strongly transverse, and the middle joints each a little produced on the inner side. I consider this individual is only a variety of *B. decipiens*.

6. *Staphylinus formosus*, Grav.

Pará, Tapajos, Ega.

This is one of the commonest and most widely distributed of the New World *Staphylinidæ;* it extends from Pennsylvania to Rio de Janeiro.

7. *Belonuchus clypeatus*, n. sp. Niger, nitidus, ano testaceo, prothorace serie dorsali 5-punctato, lateribus subrectis, abdomine minus crebre punctato. Long. corp. 5 lin.

Mas: clypeo antice vere bidentato, femoribus posticis uniseriatim spinulosis, abdomine segmento 7° ventrali apice leviter emarginato.

Fem. latet.

Allied to *B. decipiens*, but distinguished by its more sparingly punctured hind body and the two teeth of the clypeus in the male. The antennæ are short and stout, black, with the base pitchy; 3rd joint slightly longer than 2nd; 4th joint small; 5th broader than 4th, but also small; 6th joint transverse, 7—10 rather strongly transverse. Mandibles nearly black; palpi pitchy. Head about as broad as the thorax, black and shining, with two short, stout teeth (in the ♂ if not in the ♀) projecting forwards but not upwards from the front part; between the eyes with four punctures, also with four or five other punctures close to to the back part of the eyes, and a few others near the hinder angles. Thorax narrower than the elytra, quadrate, about as long as broad, not narrowed behind, and scarcely sinuate at the sides, the front angles not rounded; it is black and shining, has on each side the middle a dorsal row of five punctures—of these the hind one is a little the more remote,—and with four or five other punctures near the front angles. Scutellum rather coarsely punctured. Elytra a little longer than the thorax, black and shining, rather finely and sparingly punctured. Hind body black, with the hind portion of the 6th and the whole of the 7th segment reddish-yellow; it is rather coarsely and

not closely punctured, and sparingly pubescent. The legs are black.

Ega; one specimen, ♂.

8. *Belonuchus holisoides*, n. sp. Angustus, depressus, niger, nitidus, antennis elytrisque fuscis, illarum basi pedibusque testaceis. Long. corp. 2 lin.

Mas: abdomine segmento 7° ventrali margine apicali medio minus profunde triangulariter inciso.

Antennæ short, three basal joints yellow, the rest infuscate; joints 2 and 3 short, about equal in length, 6—10 differing little from one another, slightly transverse. Mandibles and palpi yellowish. Head large, quite as broad as the elytra, black and shining, with an irregular row of six punctures between the eyes, and three or four other punctures behind these on each side, and with a fine impressed line on the front part. Thorax narrower than the elytra, longer than broad, narrowed behind, the front angles quite rounded and deflexed, the sides sinuate; it is black and shining, with a dorsal row of three punctures on each side the middle, and besides these with only two or three other small punctures. Scutellum finely and closely punctured. Elytra about as long as the thorax, blackish, finely and not closely punctured. Hind body slender; segments 2—5 a little depressed at the extreme base, and there coarsely and closely punctured, the other part sparingly punctured, the pubescence fine and scanty. The legs are dirty yellow. The anterior and posterior femora very sparingly furnished with spines beneath.

Ega; two specimens, ♂ and ♀.

9. *Belonuchus æqualis*, n. sp. Elongatus, depressus, capite, thorace antennisque nigris, illarum basi, pedibus, pectore anoque testaceis; elytris rufis, abdomine dense subtiliter punctato. Long. corp. 3½ lin.

Mas: abdomine segmento 7° ventrali apice leviter emarginato.

About the size of *Xantholinus lentus*. Antennæ rather short, yellowish at the base, the rest pitchy; 3rd joint a little longer than the 2nd; joints 5—10 each slightly stouter than its predecessor, the 5th slightly transverse, 10th distinctly so. Mandibles pitchy; palpi yellowish. Head rather large, broader than the thorax, with an irre-

gular row of punctures between the eyes, a longitudinal impression along the front part, and a few punctures scattered about the hind part on each side. Thorax narrower than the elytra, longer than broad, narrowed behind, the front angles depressed and rounded, the sides sinuate; it is black or pitchy; on each side the middle it has a dorsal row of three or four punctures, and has two or three other punctures near the front angles. Scutellum pitchy, closely and finely punctured. Elytra dull reddish, slightly longer than the thorax, closely and finely punctured. Hind body densely and finely punctured and pubescent, black, with the hind portion of the 6th and the whole of the 7th segment yellow. Legs yellow, the front femora with two or three spines near the extremity, the hind ones with a row of spines few in number. Breast and under portions of the prothorax yellowish.

Pará, Ega, St. Paulo; eight specimens, ♂, ♀; also found by Dr. Trail at Conceicão, Rio Manhes, in May, 1874.

10. *Belonuchus impressifrons*, n. sp. Capite thoraceque nigro-æneis, nitidis; elytris rufis, abdomine nigro, apice testaceo; pectore piceo, antennarum basi, articulo ultimo pedibusque rufo-testaceis; prothorace serie dorsali 5-punctato; femoribus anticis spinulosis, posticis fere muticis. Long. corp. 4¼ lin.

Mas: abdomine segmento septimo ventrali margine apicali leviter emarginato.

Femina latet.

Antennæ longer than the head, the three basal joints reddish-yellow, the rest dark, with the last joint again paler; the 3rd joint is rather longer than the 2nd; the 5th joint broader than the 4th, rather longer than broad; 6—10 differing little from one another, each about as long as broad. Mandibles pitchy; palpi reddish. Head with the front distinctly produced between the insertion of the antennæ, with a deep longitudinal impression on the front part, with four points between the eyes, and several others at the back on each side; it is very shining and brassy black. The thorax is narrower than the elytra, longer than broad, very slightly narrowed behind; the front angles, seen from above, nearly right angles; it is brassy black, and has on each side the middle a dorsal row of five large punctures, and several other punctures on

each side. Scutellum black, closely punctured. Elytra about as long as the thorax, deep red, rather sparingly and moderately closely punctured. Hind body rather closely punctured, and with the pubescence rather long; it is black, with the hind portion of the 6th and the whole of the 7th segment yellow; beneath it is closely and rather coarsely punctured. The legs are reddish; the front femora with black spines (in the male, at any rate), the hind femora with only one or two short spines near the base. The breast is pitchy.

In the male the head is large, being much broader than the thorax; the female is unknown to me.

Ega; one male.

11. *Belonuchus armatus*, n. sp. Subdepressus, niger, nitidus, antennarum basi apiceque, et pedibus obscure testaceis, elytris rufis; abdomine crebre punctato, segmento ultimo, præcedentisque apice piceo-testaceis. Long. corp. $4\frac{1}{4}$ lin.

Mas: abdomine segmento 7° ventrali apice medio exciso, trochanteribus posterioribus elongatis.

Fem. latet.

Antennæ pitchy black, with the basal joints pitchy, and the apex again paler. Palpi reddish, mandibles pitchy red. Head broad and rather short, much broader than the thorax, with two deep punctures on the longitudinal impression behind the labrum, with two others on each side between the eyes, and again others towards the hind angles. Thorax narrower than the elytra, rather longer than broad, distinctly narrowed behind, with a series of five coarse punctures on each side the middle, and outside these with about six punctures on each side; it is, like the head, of a shining-black colour, faintly tinged with brassy. Scutellum large, blackish, closely punctured. Elytra red, about as long as the thorax, moderately closely and not coarsely punctured. Hind body blackish, with the hind part of the 6th segment, and with the base and apex of the 7th, pitchy yellow; it is not very densely punctured, but the black pubescence on the penultimate segments is dense and very coarse. The legs are dark yellow, with the coxæ still darker.

In the male the front femora bear rather long black spines, the hind femora appear to be without spines, but the trochanters project as a long sharp tooth; the ventral

plate of the 7th segment of the hind body has a small but distinct notch at the extremity.

A single male, taken at Abacaxis by Dr. Trail on the 11th April, 1874.

*Obs.*—Though the resemblance between this species and *B. impressifrons* is very great, the darker extremity of the hind body and the elongate trochanters of the male in *B. armatus* readily distinguish it.

12. *Belonuchus setiger*, n. sp. Minus depressus, nigerrimus, nitidus, ano testaceo, prothorace serie dorsali 5-punctato, abdomine minus dense punctato, supra et infra setis erectis crebre vestito; femoribus posticis muticis. Long. corp. $3\frac{1}{2}$ lin.

Mas: femoribus anticis evidenter spinulosis, abdomine segmento 7° ventrali margine apicali leviter emarginato.

Fem.: femoribus anticis fere muticis.

Very black and shining, with the extremity of the hind body yellow. The antennæ are a little shorter than head and thorax, distinctly thickened towards the extremity; 3rd joint rather shorter than 2nd; 4th joint about as long as broad, 5—10 transverse. Head with the front considerably produced between the antennæ, with a broad and deep longitudinal impression on the front part, with two punctures on each side near the front part of the eyes, and with some other punctures near the sides behind. The thorax is quite as long as broad, scarcely narrowed behind, convex transversely, very black and shining, with the five punctures in a row on each side the middle deep, and with six other punctures on each side. The scutellum is finely and closely punctured. The elytra are longer than the thorax, sparingly and finely punctured. The hind body is narrowed towards the extremity; it is black, with the hind margin of the 6th segment and the whole of the 7th segment pale yellow, the anal styles black; segments 2—4 are rather sparingly punctured, 5 and 6 more distinctly and closely so; the erect setæ, both on its upper and under side, are unusually numerous and long. The legs are quite black.

Ega; two specimens, ♂ and ♀.

*Obs.*—This species has greatly the form and appearance of a *Philonthus*.

## Philonthus.

This generic name at present designates nearly four hundred species found in all parts of the world. I here describe nineteen new Amazonian species. These nineteen species belong to several very different groups. *P. amazonicus* is allied to our European *P. scybalarius; P. corallipennis* to the group comprising the *P. fulvipes* and its allies; while *P. deletus* seems quite allied to our *P. prolixus*, and, like it, has the appearance of a small *Lathrobium*. The other species are very different from any we have in Europe. *P. muticus* is very like the depressed *Belonuchi*, and *P. gracillimus* is very remarkable by its elongate, narrow prothorax. The next seven species belong to a brightly-coloured group of species which is peculiar to South America, and of these seven *P. palpalis* is remarkable by the dilated terminal joint of the labial palpi. The next five species belong also to a group confined to South America: the species in colour much resemble those of the preceding group, but whereas in the first of the two groups the anterior angles of the thorax are distinct and rather prominent, in the second they are rounded and very depressed. The *P. longipes* is in form similar to the species I have last named, but it has a very peculiar punctuation along the margins of the thorax, and its elytra are densely punctured. *P. serraticornis* is a remarkably aberrant species, which both in appearance and structure approaches the insects I describe in this paper under the generic name *Gastrisus*.

1. *Philonthus amazonicus*, n. sp. Niger, pedibus fusco-testaceis, abdomine subversicolore, apice indeterminate rufo; capite minore subovato, prothorace serie dorsali 5-punctato. Long. corp. 5 lin.

Mas: tarsis anticis dilatatis, abdomine segmento 7° ventrali margine apicali medio minus profunde triangulariter exciso.

Fem.: tarsis anticis simplicibus.

Allied to *P. scybalarius*, but much larger. Antennæ quite as long as head and thorax, black, the first joint pitchy: 3rd joint considerably longer than 2nd, 4 and 5 much longer than broad, 6—9 slightly produced on the inner side, 10th rather longer than broad; last joint a little longer than the 10th. Head small, sub-ovate, narrower than the thorax, with two punctures near the

front part on each side, close to the inner margin of the eye, and very near to one another, and with several other punctures on each side behind the eye. Thorax longer than broad, narrowed to the front, straight at the sides, with a row of five punctures on each side the middle, and outside this row with a row of three other punctures on the front part. Scutellum closely and finely punctured. Elytra about as long as the thorax but broader, closely and finely punctured. Hind body narrowed towards the extremity, blackish and a little versicolorous; the 6th segment black at the base, the rest of it and the 7th segment rusty yellow; the hind margin of the 5th segment also rusty; it is rather closely punctured on the upper side, the punctuation being denser on the basal halves of the 5th and 6th segments than elsewhere; its pubescence is rough and coarse. The legs are of a dirty-yellow colour, with the tibiæ and tarsi darker, the intermediate coxæ approximated.

Pará, Ega; six specimens, ♂ and ♀.

2. *Philonthus corallipennis*, n. sp. Niger, elytris anoque rufis, dense subtilissime punctulatis; antennarum basi pedibusque testaceis, prothorace serie dorsali subtiliter 8-punctato. Long. corp. 3 lin.

Mas: tarsis anticis dilatatis.

Allied to *P. salinus*, but much narrower, and with the prothoracic series of punctures more numerous. The antennæ are long and slender, the basal joint entirely and the 2nd and 3rd partly yellowish; 3rd joint longer than 2nd, all the joints longer than broad. The palpi are yellowish. The head is rather narrower than the thorax; at the back and between the eyes it is finely, rather closely punctured, the middle part impunctate. The thorax is longer than broad, nearly straight at the sides, and not (or scarcely) narrowed in front; it has on each side the middle a dorsal row of eight punctures, not very regularly placed, and has besides four or five others in a line outside these. The scutellum is smoky, densely punctured. The elytra are about as long as the thorax, but a little broader, of a red colour, very densely and finely punctured, quite dull. Hind body rather long and slender, but little narrowed behind, very densely and finely punctured, the hinder portion reddish; the limit of this colour not well marked. The legs are pale yellow.

Pará, Obydos, Ega, Tapajos; numerous specimens.

3. *Philonthus deletus*, n. sp. Rufo-testaceus, nitidus, capite elytrisque obscurioribus, horum apice, antennis pedibusque testaceis; prothorace subtiliter multipunctato, lineâ latâ mediâ lævi. Long. corp. 2 lin.

Quite of the structure of *P. prolixus*. Antennæ yellow, rather stout; 3rd joint about equal to the 2nd; 10th joint scarcely so long as broad. Head dark reddish, about as broad as the thorax, rather finely and not closely punctured, the middle part impunctate. Thorax narrower than the elytra, one and a-half times as long as broad, scarcely narrowed behind, the sides a little sinuate; it is of yellowish colour, shining, a broad middle space impunctate; the sides punctured, the punctuation not deep and not very close. Scutellum yellowish, very finely and indistinctly punctured. Elytra rather longer than the thorax, fuscous; the apex pale yellow, finely and rather sparingly punctured. Hind body yellowish, not narrowed to the extremity, its punctuation and pubescence extremely fine and not dense. Legs yellow, rather stout.

The male has a moderately large notch at the extremity of the ventral plate of the 7th segment of the hind body, and the hind margin of the 6th segment is slightly emarginate.

Tapajos; four individuals.

4. *Philonthus muticus*, n. sp. Depressus, obscure rufo-testaceus, capite abdomineque nigricantibus, hoc crebre subtiliter punctato, apice testaceo, prothorace serie dorsali 5-punctato; coxis intermediis distantibus, tarsis anticis omnino simplicibus. Long. corp. 3½ lin.

Mas: capite majore, abdomine segmento 7° ventrali apice leviter emarginato.

This species resembles greatly *Belonuchus æqualis*, but has the anterior and posterior femora entirely without spines, except the three or four at the extremity of the front femora found in most species of *Philonthus*. The antennæ are inserted quite at the anterior margin of the front, which is not at all produced in the middle; they are a little shorter than the head and thorax, the three basal joints reddish, the rest infuscated; the 3rd joint longer than the 2nd, the 10th about as long as broad. The mandibles and palpi are reddish. The head is blackish, with two points on each side near the front, at the inner side of the eyes, and between these with a punctiform longitudinal impression, and with several other punctures on each side, near the

back part of the head. The thorax is rather narrower than the elytra; it is rather longer than broad, the front angles much depressed and rounded, the sides sinuate; it is of a reddish colour, besides the dorsal series of punctures with four or five others on each side. The scutellum is similar in colour and sculpture to the elytra. Elytra reddish, scarcely so long as the thorax, finely and closely punctured. Hind body blackish, rather paler at the base, with the hind margins of the segments narrowly reddish; the hinder portion of the 6th segment and the whole of the 7th yellowish; it is rather closely and finely punctured. Legs and breast yellowish.

Ega and St. Paulo; four specimens, ♂, ♀.

5. *Philonthus gracillimus*, n. sp. Elongatus, perangustus, rufo-testaceus, capite nigro, elytris abdominisque segmentis 5 et 6 infuscatis; antennis elongatis, fuscis, articulo ultimo ferrugineo, prothorace serie dorsali subtiliter 5-punctato. Long. corp. 3 lin.; lat. (abdominis basi) vix $\frac{1}{2}$ lin.

A singular Lathrobioid species. The antennæ are long and slender, and reach nearly to the extremity of the elytra; 3rd joint long and slender, much longer than the 2nd; all the rest of the joints much longer than broad, the last paler than the rest. The mandibles and palpi are yellowish. The head is narrow, but rather broader than the thorax; it is narrowed behind the eyes; it is of a black colour, rather finely and closely punctured, with the disc impunctate. The thorax is very peculiar in form; it is much narrower than the elytra, and very elongate, being more than twice as long as broad; it is not narrowed behind, but appears somewhat narrowed in front, owing to the front angles being greatly inflexed; it is strongly sinuate at the sides before the hind angles; it is of a reddish colour, and has on each side the middle a dorsal row of five fine punctures, and has also a few other fine punctures on each side. The scutellum is finely punctured. The elytra are not so long as the thorax, rather finely and closely punctured. The hind body is elongate and slender, yellowish, with the 5th and 6th segments broadly infuscated; it is closely, finely and evenly punctured. The legs are yellow, long and slender.

Ega; one specimen.

*Obs.*—This unique individual is in bad condition, being quite deprived of its pubescence.

6. *Philonthus æneiceps*, n. sp. Rufus, capite æneo, nitidissimo, abdomine ante apicem nigro. Long. corp. 3½ lin.

Mas: capite majore, femoribus anticis spinulosis, abdomine segmento 7° ventrali medio producto, ante apicem leviter transversim impresso, tarsis anticis simplicibus.

Antennæ nearly as long as the head and thorax, yellowish; 2nd and 3rd joints about equal, 4—10 each a little shorter than its predecessor, none of them transverse. Mandibles and palpi yellowish. Head on the upper side shining brassy, the front with a medial longitudinal impression, on which are placed two large confluent punctures, and on each side of this with three punctures, forming an irregular row between the eyes, and with eight or ten other large punctures on each side at the back part. Thorax rather longer than broad, slightly narrowed behind, the sides a little sinuate; it is of a shining reddish-yellow colour, with a dorsal row of five coarse punctures on each side the middle, and with six or seven other large punctures on each side, near the front. Scutellum pitchy, the basal part rather coarsely punctured, the apex impunctate. The broad elytra are about as long as the thorax, of a shining-yellowish colour, coarsely and sparingly punctured. The hind body is but little narrowed to the extremity; it is of a brownish-yellow colour, with the 5th and 6th segments black, the extremity of the latter and the 7th segment pale yellow, the hind portion of the anal styles brownish; segments 2—4 are sparingly and finely punctured, 5 and 6 much more closely punctured, these latter with a coarse, depressed, black pubescence. The legs are yellow, the intermediate coxæ distant.

In the male the hind portion of the ventral plate of the 7th segment is produced in the middle; the produced part is truncate at the extremity, and a little transversely impressed before this; in front of this depression are inserted six or eight fine depressed setæ.

In the female the head is only as broad as the thorax, and the front femora are unarmed.

Ega; two specimens, ♂ and ♀.

7. *Philonthus cognatus*, n. sp. Rufus, capite æneo, nitidissimo, abdomine ante apicem nigro. Long. corp. 3½ lin.

Mas: capite majore, femoribus anticis spinulosis, abdomine segmento ventrali apice leviter producto medio anguste sed profunde triangulariter inciso, tarsis anticis simplicibus.

This species is in appearance exactly like the preceding one, but differs by the abdominal characters of the male, and also by these one or two points, which may perhaps be individual rather than specific. The antennæ have the third joint a little longer, so that it is slightly longer than the 2nd, and joints 4—11 are a little more dusky. The elytra are rather more closely and finely punctured.

In the male the middle part of the ventral plate is a little produced backwards and has at its extremity a narrow but rather deep triangular notch. The head is broader than the thorax.

In the female the head is only as broad as the thorax, and the front femora are unarmed.

Ega; two specimens, ♂, ♀.

*Obs.*—Besides the specimens above described, there are four others from Ega and Tapajos (one ♂ and three ♀), about which I cannot feel sure whether they belong to *P. cognatus* or an extremely closely allied but distinct species.

8. *Philonthus Traili*, n. sp. Rufo-testaceus, nitidus, antennis (basi excepto) abdomineque ante apicem nigricantibus, capite æneo; prothorace serie dorsali 5-punctato; elytris sat fortiter punctatis. Long. corp. 3½ lin.

Mas: fere sine notis sexualibus externis.

Antennæ moderately long, with the three basal joints yellow, the rest black; they are slightly thickened towards the extremity; the 4th joint is a little longer than broad, the 10th hardly so long as broad. Mandibles and palpi yellow. Head brassy, rather broader than the thorax, with a deep impression on the middle in front, and two punctures on each side between the eyes, with a few other punctures behind these, and some at the vertex on each side; the middle part smooth and shining. Thorax yellow, a good deal narrower than the elytra, longer than broad, a little narrowed behind, with a series of five coarse punctures on each side the middle, and outside this on each side with about six other coarse punctures. Scutellum rather large, concolorous with elytra, distinctly punctured. Elytra of a tawny-yellow colour, scarcely longer than the thorax, rather deeply and distinctly but not coarsely nor closely punctured, shining, very finely and scantily pubescent. Hind body yellow, with the 5th segment black, except at the extreme base; the 6th black, with the extremity yellow,

the 7th yellow; the basal segments are very sparingly punctured; the 5th and 6th segments are more closely punctured, and bear a coarse black pubescence. The legs are yellow. The underside of the head is without punctures.

In the male the front femora are almost without spines; the ventral plate of the 7th segment has its hind part slightly produced in the middle; the produced part is nearly entire, there being only an extremely slight emargination of its hind margin.

Ananá; a single male captured by Dr. Trail on the 6th September, 1874.

9. *Philonthus capitalis*, n. sp. Capite thoraceque æneis, nitidis; elytris rufis, angulo apicali nigro; abdomine basi obscure rufo, apice testaceo, segmentis 4, 5, 6 nigris; antennarum basi et articulo ultimo, cum pedibus testaceis. Long. corp. 3½ lin.

Antennæ nearly as long as head and thorax; the three basal joints as well as the 11th yellowish, the rest infuscated; 2nd and 3rd joints about equal; 4—10 differing but little from one another in length, each slightly stouter than its predecessor, none of them transverse. Palpi and mandibles yellowish. Head broader than the thorax, the front distinctly produced between the insertion of the antennæ and with a deep longitudinal impression in front, with two large punctures on each side between the eyes, and with several other large punctures on each side at the back; it is of a shining-brassy colour. Thorax much narrower than the elytra, rather longer than broad, distinctly narrowed behind, the sides a little sinuate; it is similar in colour to the head, and has on each side the middle a row of five punctures, and also on each side near the front six or seven other punctures; all these punctures very large. Scutellum nearly black, densely and finely punctured. Elytra about as long as the thorax, reddish, broadly black towards the extremity, finely and rather closely punctured. The hind body is of a brownish colour at the base, then with the 4th, 5th and 6th segments black, the hind margin of the latter and the 7th yellow; it is on the upper side rather closely punctured, especially on the 4th, 5th and 6th segments, where also there is a coarse, depressed, dense, black pubescence. The legs are yellowish, with the anterior and middle coxæ infuscated. The breast pitchy, the intermediate coxæ distant.

Ega; one specimen. This I believe to be a male on account of its large head; the front femora have a few very short spines, but the 7th segment of the hind body is rounded at the extremity, so that the individual may possibly be a female.

10. *Philonthus lustrator*, n. sp. Fulvus, capite thoraceque æneis, elytris apicem versus, abdomineque ante apicem nigris, ano pedibusque testaceis; prothorace serie dorsali 5-punctato. Long. corp. 3½ lin.

Mas: abdomine segmento 7° ventrali margine apicali leviter emarginato, tarsis anticis simplicibus.

Antennæ nearly as long as head and thorax, the three basal joints yellow, the rest infuscated; 3rd joint hardly so long as 2nd, 4—10 each a little shorter and a little stouter than its predecessor, the 4th longer than broad, 10th scarcely so long as broad. Mandibles and palpi yellowish. Head quite as broad as the thorax, with the front distinctly produced between the insertion of the antennæ, with a deep longitudinal impression in front, with a line of four deep punctures between the eyes, and with numerous others on each side at the back; it is of a brassy colour, but through this the original tawny colour is perceptible. Thorax much narrower than the elytra, longer than broad, a little narrowed behind, a little sinuate at the sides; it is similar in colour to the head, and has on each side the middle a rather curved row of five coarse punctures, and has besides six other punctures near the front angles. The scutellum is densely and finely punctured. The elytra are broad, scarcely so long as the thorax, of a shining-tawny colour, broadly black towards the extremity, rather coarsely and moderately closely punctured. The hind body is of a tawny colour, with the 5th and 6th segments black; the extremity of the 6th and the whole of the 7th segments yellow; segments 2—4 sparingly punctured, 5 and 6 more closely punctured and with a coarse depressed black pubescence. Legs yellow.

Pará; one individual, ♂.

11. *Philonthus æneicollis*, n. sp. Rufus, thorace æneo, elytris maculâ laterali ante apicem, abdomineque ante apicem nigris, ano pedibusque testaceis; antennis fuscis, basi cum articulo ultimo testaceis, thorace serie dorsali 5-punctato. Long. corp. 3½ lin.

Mas latet.

Antennæ rather shorter than head and thorax, a little thickened towards the extremity; the three basal joints yellow, the following ones blackish, the last joint again yellow; 2nd and 3rd joints about equal, the penultimate joints not quite so long as broad. Mandibles and palpi yellow. Head bright yellowish-red, slightly broader than the thorax (in the ♀), the front distinctly produced between the antennæ, with a deep longitudinal impression in front, with two punctures on each side in a line near the front part of the eyes, and with several other large punctures on each side at the back. Thorax much narrower than the elytra, about as long as broad, a little narrowed behind, the sides slightly sinuate, the front angles distinct, and nearly right angles; it is of a brassy colour, and has on each side the middle a row of five very coarse punctures, and with six other very large punctures near the front angles. Scutellum densely and finely punctured. Elytra broad, about as long as the thorax, bright tawny, with a large lateral spot on each side near the extremity blackish; they are rather deeply and rather closely but not coarsely punctured. Hind body tawny, with the 5th and 6th segments black, the extremity of the latter and the 7th yellow; it is distinctly and moderately closely punctured, the punctuation being denser on the 5th and 6th segments than elsewhere, these segments also with a coarse depressed black pubescence. Legs yellow; under surface tawny, intermediate coxæ distant.

Ega and St. Paulo; two specimens; one of them I have proved by dissection to be a female, and the other does not differ from it by any external character.

12. *Philonthus palpalis*, n. sp. Rufo-testaceus, nitidus, antennis medio obscurioribus, abdomine ante apicem nigro; prothorace serie dorsali 5-punctato, punctis grossis; palpis labialibus articulo ultimo clavato. Long. corp. 3½ lin.

Antennæ moderately long, reddish, the three basal joints yellow, and the two apical ones a little paler than the preceding ones; 3rd joint about equal to 2nd; 4th joint rather longer than broad, 10th not quite so long as broad. Second joint of maxillary palpi a good deal broader than the others; the last joint of the labial palpi slender at the base, but dilated towards the extremity, which, however, is not truncate, but almost acuminate. Head yellowish, broader

than the thorax, without distinct impression on the middle of the front, but with two punctures on each side between the eyes, and a few other coarse punctures towards the rounded hind angles. Thorax longer than broad, yellowish, with a slight brassy reflection; it is a good deal narrower than the elytra, and distinctly narrowed behind; on each side the middle it has a series of five extremely coarse punctures, and outside these about six other very coarse punctures on each side. Elytra yellow, about as long as the thorax, coarsely and rather closely punctured. Hind body yellow; the basal segments sparingly punctured; the 5th and 6th segments blackish, except the hind margin of the latter; the 7th yellow, anal styles nearly black. Legs yellow.

The male has the hind margin of the ventral plate of the 7th segment of the hind body very slightly emarginate.

Amazons; a single specimen, without more special locality, from Mr. Bates.

*Obs.*—I had supposed this specimen to be a female, until I dissected the apical segments; it is just possible that the remarkable form of the last joint of the labial palpi may be peculiar to the male.

13. *Philonthus aberrans*, n. sp. Angustus, nitidus, capite suborbiculato, æneo; prothorace rufo, serie dorsali 6-punctato; elytris fuscis, basi fulvis; abdomine fulvo, ante apicem nigro, segmento 7°, cum seg. sexti margine apicali, testaceo; antennis pedibusque testaceis. Long. corp. 3½ lin.

Mas: tarsis anticis simplicibus, abdomine segmento 7° ventrali apice medio triangulariter exciso.

Antennæ about as long as head and thorax, slender, yellowish; 3rd joint longer than 2nd, 4—10 each is a little shorter but scarcely stouter than its predecessor, the 4th quite twice as long as broad, and even the 10th longer than broad. The mandibles and palpi are yellowish. The head is slightly broader than the thorax; the front distinctly produced between the antennæ, with a deep, longitudinal impression along the front, with two punctures on each side in a line near the inner margin of the eyes, and with numerous other coarse punctures on each side at the back; it is of a shining-brassy colour. Thorax much narrower than the elytra, its length considerably (one and a-half times) greater than its width; it is narrowed behind

and sinuate at the sides, the front angles deflexed and rounded; it is of a shining-reddish colour, has a dorsal row of six coarse punctures on each side the middle, and has also six or seven other coarse punctures on each side near the front part. The scutellum is smoky, closely and finely punctured. The elytra are scarcely so long as the thorax, tawny at the base, the other part infuscate; they are coarsely and moderately closely punctured. The hind body is rather slender; segments 2—4 are tawny in colour, 5 and 6 black; the hind margin of the 6th and the base of the 7th yellow; segments 2—4 are each at the base sparingly and finely punctured, the 5th is more closely, and the black part of the 6th still more closely punctured; the extremity of the 7th segment, as well as the anal styles, is fuscous. The legs are yellow, long and slender; the intermediate coxæ distant.

Ega; two specimens, ♂, ♀.

*Obs.*—Besides these individuals, I have three other specimens which I believe represent two distinct but very closely allied species, but as they are all females I cannot feel quite sure about it.

14. *Philonthus conformis*, n. sp. Nitidus, rufus, pedibus testaceis, capite æneo, elytris basi et summo apice rufis, abdomine ante apicem nigricante, apice testaceo; prothorace serie dorsali 6-punctato; elytris crebre (basi dense) punctatis. Long. corp. 3½ lin.

Mas: abdomine segmento 6° ventrali apice leviter emarginato, 7° late minus profunde exciso.

Antennæ elongate and slender, red, the middle joints rather more obscure in colour than the basal and apical ones; 3rd joint longer than 2nd, 10th longer than broad. Thorax red, elongate and narrow, on each side of the middle with a row of six punctures; the punctures are only moderately large, each being separated from the neighbouring one by a perfectly distinct interval; and also with about seven other coarse punctures on each side. Elytra hardly so long as the thorax, red at the base, then smoky, with the extreme margin again reddish; the punctuation at the base is dense and only moderately coarse, it becomes more sparing towards the hind margin. Hind body reddish, with the 5th and basal portion of the 6th segments reddish, the red segments very sparingly punctured, the black not densely punctured; the 7th segment

and hind part of the 6th yellow, anal styles nearly black. Legs yellow.

The male has the hind margin of the 6th segment beneath broadly but slightly emarginate; the following segment has a rather shallow, rounded emargination at the extremity.

Amazons; a single male, without special locality.

*Obs.*—Though very closely allied to *P. aberrans*, this species has the basal portions of the 5th and 6th segments of the hind body more sparingly punctured, and the male has the hind margin of the 6th segment quite distinctly emarginate.

15. *Philonthus propinquus*, n. sp. Angustus, nitidus, capite suborbiculato, æneo; prothorace rufo-testaceo, serie dorsali grosse 6-punctato; elytris fulvis, apice late fusco-æneseentibus; abdomine fulvo, ante apicem nigro, parce punctato. Long. corp. 3½ lin.

This species is extremely close to the preceding one, and differs from it only as follows. The thorax is narrower, the elytra are a little brassy towards the extremity, the hind body is more sparingly punctured, the extreme base of each of the 5th and 6th segments being much more sparingly punctured than in *P. aberrans;* the punctures on the thorax are larger, and the elytra are rather more sparingly punctured.

Ega; one specimen, ♀.

*Obs.*—I have also another female, found by Mr. Bates, which I believe belongs to a closely allied but distinct species; the antennæ have joints 4—9 distinctly infuscate, and the two apical ones yellow, and the femora and tibiæ are a little infuscate at their apices.

16. *Philonthus regillus*, n. sp. Fulvus, capite æneo, elytris apicem versus, abdomineque ante apicem nigricantibus; antennis basi, pedibus, anoque testaceis; prothorace grosse punctato, punctorum numerus utrinque circiter sexdecim. Long. corp. 4 lin.

Allied to *P. aberrans*, but easily distinguished by the different punctuation of the thorax. The antennæ are rather longer than head and thorax, the three basal joints yellow, the rest infuscate; joint 3 longer than 2nd; 4—10 differing but little from one another, even the 10th considerably longer than broad. Head brassy, a little broader

than the thorax, rather long, a little narrowed behind, the front produced between the insertion of the antennæ, and with a deep longitudinal impression, with two punctures on each side between the eyes, the back part coarsely and rather numerously punctured. Thorax much narrower than the elytra, considerably longer than broad, and considerably narrowed behind, the sides sinuate, front angles seen from above not much rounded; it is of a reddish-yellow colour, very shining, and has on each side the middle a dorsal row of seven very coarse punctures, and between these, near the base on each side, three or four accessory punctures, so placed as to render the dorsal row confused, also with five or six other coarse punctures on each side, near the front angles. Scutellum densely and finely punctured. Elytra about as long as the thorax, tawny at the base, smoky towards the extremity, very coarsely and rather sparingly punctured. Hind body tawny, with the 5th and 6th segments blackish, the hinder portion of the latter and the 7th pale yellow, anal styles fuscous; it is sparingly punctured, except on the black parts of the 5th and 6th segments, where the punctuation is much closer. The legs are yellow, the intermediate coxæ distant.

St. Paulo; two specimens, both, I think, ♀.

17. *Philonthus abactus*, n. sp. Angustus, nitidus, rufo-testaceus, capite æneo, elytris apicem versus infuscatis; abdomine ante apicem nigro, ano pedibusque pallidis; prothorace omnium grosse punctato, punctorum numerus utrinque circiter viginti, lineâ mediâ lævi fere nullâ. Long. corp. $3\frac{1}{2}$ lin.

Mas: abdomine segmento 7° ventrali margine apicali minus profunde triangulariter emarginato.

A remarkable Stilicoid species allied in structure to *P. aberrans*, but with the punctuation of the thorax quite different. The antennæ are long, rather longer than head and thorax; they are rather slender and scarcely at all thickened at the extremity, they are of a yellowish colour, joints 4—11 being duskier than the three basal joints; 2nd and 3rd joints about equal, 4th nearly as long as 3rd; from the 5th to the 10th each joint is a little shorter than its predecessor, the 11th joint about as long as the 9th. Head brassy, broad and short, much broader than the thorax, nearly as broad as the elytra, the front

much produced between the antennæ—this part with a deep impression, a line of four punctures between the eyes, two on each side, and between them a fifth, a continuation of the front longitudinal impression; all the back part and behind the eyes rather closely punctured, the punctures being very coarse and deep. Thorax reddish-yellow, shining, nearly twice as long as broad, distinctly narrowed behind, the sides sinuate, the front angles greatly depressed, the front part somewhat produced in the middle; it is covered with extremely coarse and deep punctures, only the posterior angles and a space between the two hinder punctures being distinctly free from them. Scutellum narrow, closely punctured. Elytra much narrower than the thorax, of a shining-tawny colour, the back portion infuscated and slightly metallic; they are very coarsely and moderately closely punctured. The hind body is slender, it is sparingly but rather coarsely punctured, with erect long black setæ; it is shining and of a tawny colour at the base, the 5th and 6th segments being blackish; the hind margin of the latter and the 7th pale yellow, tip of the 7th and anal styles fuscous. Legs long and slender, pale yellow, the pubescence at the extremity of the tibiæ (especially the intermediate ones) rather darker.

Ega; one specimen, ♂.

18. *Philonthus longipes*, n. sp. Elongatus, capite suborbiculato, æneo; prothorace basin versus angustato, fulvo, disco æneascente; elytris dense punctatis, fulvis, fasciâ latâ mediâ violaceâ; abdomine fulvo, segmentis 2—4 late nigricantibus, 5 et 6 nigris, ano flavo; pedibus et antennis basi articuloque ultimo fulvo-testaceis; prothorace serie dorsali 5-punctato. Long. corp. $4\frac{1}{2}$ lin.

Mas latet.

Antennæ slightly longer than head and thorax; three basal joints reddish-yellow, the rest infuscated, the terminal joint being again paler; 2nd and 3rd joints about equal, 4—10 differing little in length, each slightly stouter than its predecessor, even the 10th considerably longer than broad; 11th joint rather long, obliquely acuminate. Mandibles and palpi reddish-yellow. Head slightly broader than the thorax, the hinder angles rounded, the front distinctly produced between the insertion of the antennæ, with a deep longitudinal impression on the front part, with four large punctures in a line between the eyes,

with several other large punctures at the back, and between and behind these with numerous finer punctures; it is of a shining-brassy colour. Thorax rather longer than broad, distinctly narrowed behind, the front angles greatly deflexed and rounded, the sides sinuate; it is of a reddish colour, with the disc indistinctly brassy; it has a dorsal row of five coarse punctures on each side the middle, and has three or four other coarse punctures on each side, and besides this has the extreme sides and front angles densely and rugosely punctured. The scutellum is densely and finely rugose-punctate. The elytra are greatly broader than the thorax, and about as long; they are of a tawny colour, with a broad violet band across the middle; they are densely and rather finely punctured, and not shining. The hind body is tawny; segments 2—4 black across the middle, 5 and 6 nearly entirely black, the hind margin of the latter and whole of the 7th segment pale yellow; the black parts are closely and rather coarsely punctured; besides the very coarse, depressed, black pubescence of segments 4—6, there are numerous other long, outstanding, black setæ. The legs are long, of a yellowish colour. The breast tawny.

Obydos; two individuals, both, I believe, females.

19. *Philonthus serraticornis*, n. sp. Fulvus, nitidus, capite nigro; antennis fuscis articulo ultimo testaceo, articulis 4—10 intus productis; prothorace serie dorsali subtiliter 6-punctato. Long. corp. $4\frac{1}{2}$ lin.

Mas: tarsis anticis simplicibus.

This is another aberrant species which will probably ultimately be separated generically from *Philonthus*, the antennæ being distinctly serrate and the lateral lines of the under surface of the prothorax not joined till quite at the front part of the coxal cavities. It is broad and rather depressed. The antennæ are rather shorter than head and thorax, of an obscure colour, each joint a little red at the base; the 11th joint yellowish; joints 5—10 distinctly produced and pointed on the inner side, at their broadest part broader than long; 3rd joint long, being considerably longer than the 2nd. Mandibles and palpi reddish, the mandibles very short. Head black and shining, orbiculate, the eyes large, the clypeus convex, so as to render the insertion of the antennæ a little different to what is usual in *Philonthus;* the middle parts of the head smooth, the back

part and the sides of the eyes coarsely punctured. Thorax a little broader than the head, a little narrower than the elytra, straight at the sides, and not distinctly narrowed either before or behind, the front angles but little rounded, the hind angles nearly absent; it is of a shining-tawny colour, with a dorsal row of six small punctures on each side the middle, and with four or five others placed in an irregular row between this and the side. The scutellum is yellowish, finely and rather sparingly punctured. The elytra are about as long as the thorax, of a yellowish colour, finely and sparingly punctured. The hind body is very broad; it is of a yellowish or tawny colour, extremely finely, moderately closely punctured. The legs are yellow, the middle coxæ distant, the lateral margins of thorax without a spiracular membrane.

Ega; one specimen. I have ascertained by dissection that it is a male, though there is nothing external to indicate this.

## Holisus.

This peculiar genus at present consists of half a dozen species, to which I now add five new ones. All the species known are South American. The genus was placed by Erichson in the *Xantholinini*, but is assigned by Kraatz to the *Staphylinini*. I have not made a sufficient investigation to enable me to pronounce an opinion as to its nearest allies, but it appears to me to be as yet a remarkably isolated form. *H. discedens* here described differs from the other species in the structure of its hind body, which is more convex, so as to be subcylindric.

1. *Holisus depressus*, n. sp. Niger, nitidus, depressus, ano rufo, pedibus piceis; capite thoraceque parce fortiter punctatis; elytris crebre sat subtiliter punctatis. Long. corp. 3¾ lin.

Antennæ nearly black; 3rd joint a good deal longer than 2nd, 4th and 5th each about as long as broad, 6—10 very similar to one another, each a little transverse, 11th pale at the extremity. Palpi reddish. Head large, rather broader than the thorax, oblong, quite straight at the sides, on the front part with coarse punctures, forming on each side an irregular patch placed in a slight depression; also on each side of the middle with a patch of about eleven coarse punctures, also punctured at the sides and at

the vertex; it is black and shining. Thorax about as broad as the elytra, rather broader than long, a little sinuate at the sides, and a good deal narrowed behind, black and shining, and with a slight opalescent reflection, bearing a few irregularly-placed, rather coarse punctures. Scutellum rather large, coarsely punctured. Elytra pitchy black, much longer than the thorax, rather coarsely and closely but yet not densely punctured, distinctly shining. Hind body rather broad and depressed, coarsely and rather closely punctured, the 6th segment more sparingly so, and the yellowish 7th segment still more sparingly. Legs short and stout, pitchy.

Ega; a single individual.

*Obs. I.*—A second individual, brought by Mr. Bates from the same locality, may be either the other sex of *H. depressus* or a closely allied but distinct species; it is a little smaller, and has the head rather shorter and the hind body not quite so closely punctured; it has the hind margin of the ventral plate of the 7th segment of the hind body rounded, while this part is more truncate in *H. depressus*.

*Obs. II.*—*H. depressus* is very closely allied to *H. analis*, Er., but is rather larger and broader, has the thorax shorter in proportion to its length, and the elytra less densely and rather more coarsely punctured.

2. *Holisus picipes*, n. sp. Parallelus, minus latus, nitidus, niger, pedibus piceis; capite thoraceque vage, elytris subtiliter minus crebre, abdomine fortiter, punctatis. Long. corp. vix 3 lin.; lat. $\frac{1}{2}$ lin.

Allied (judging from description) to *H. humilis*, Er., but larger, and with the elytra more finely punctured. Antennæ rather longer than the head, not stout; 3rd joint distinctly longer than 2nd; 5th joint about as long as broad, 6—10 each a little transverse. Mandibles pitchy; palpi dusky yellowish. Head oblong, straight at the sides, the hind angles not much rounded, the length from clypeus to vertex a little greater than the width; it is black and shining, rather strongly and coarsely punctured, the punctures being disposed as follows: a patch of about seven on each side placed in an obscure depression behind the antennæ, and between these two patches two or three other punctures; behind these a broad, longitudinal space is impunctate, and at each side behind is a large patch of

fifteen or sixteen punctures, each patch consisting of three indistinct oblique rows. Thorax just about as broad as the head and elytra, its width distinctly greater than its length; it is a little narrowed behind, and has on each side sixteen or eighteen punctures irregularly scattered; the middle space between these punctures much narrower at the back part than in front. Elytra longer than the thorax, pitchy black, finely and not closely punctured. Hind body parallel, rather coarsely but not densely punctured. Legs pitchy.

Ega; two specimens.

3. *Holisus excavatus*, n. sp. Picco-testaceus, nitidus, antennis pedibusque testaceis, thorace concavo, elytris dense subtiliter punctulatis. Long. corp. 1¾ lin.

Antennæ considerably longer than the head, yellow; 3rd joint scarcely longer than 2nd, 6—10 a little transverse. Mandibles and palpi yellow. Head pitchy, broad, even a little broader than thorax or elytra; the length about as great as the width; the hind angles considerably rounded; the upper surface sparingly and irregularly punctured, the punctures leaving scarcely any distinct smooth space in the middle. Thorax as broad as the elytra, about as long as broad, narrowed behind, the sides rounded; it is of a pitchy-yellow colour; the whole of the upper surface concave, sparingly and irregularly punctured. The elytra are longer than the thorax, finely and closely punctured, of a pitchy-yellow colour, their disc concave. Hind body pitchy yellow, rather finely, moderately closely punctured. Legs yellow.

Ega; one specimen.

*Obs.*—This individual is a little immature, so that the colour of the species may be somewhat darker than is here described, and it is probable that when fully developed the elytra may be without impression, but I expect the thorax is naturally concave on the upper surface.

4. *Holisus umbra*, n. sp. Omnium perdepressus, angustus, nitidus, piceus, antennarum basi, pedibus, anoque testaceis; thorace concavo, elytris crebre subtiliter punctulatis. Long corp. 1½ lin.

Antennæ rather slender, a little longer than the head, dusky yellow, paler at the base; 3rd joint small, shorter than the 2nd, 6—10 rather transverse. Palpi yellow.

Head rather large, fully as broad as thorax or elytra, oblong-quadrate, the sides straight, the hind angles a little rounded; it is on the upper side rather finely and sparingly punctured. Thorax as long as broad, narrowed behind and rounded at the sides, the upper surface deeply impressed, finely and sparingly punctured, an oblong space on the disc impunctate. Elytra quite as broad as, and longer than the thorax; like it, and the head, of a pitchy colour, closely and finely punctured. Hind body parallel, pitchy, with the extremity yellow, evenly, moderately finely, and moderately closely punctured. Legs yellow.

Ega; one specimen.

5. *Holisus discedens*, n. sp. Niger, nitidus, pedibus piceis; capite thoraceque parce fortiter punctatis; elytris crebre subtiliter punctatis; abdomine minus depresso, sat crebre punctato. Long. corp. 2½ lin.

Palpi pitchy; 1st and 2nd joints of antennæ pitchy (the rest wanting). Head black, quite depressed, quite straight at the sides and vertex, the hind angles rounded; it is rather broader than the thorax or elytra, and bears coarse and distinct but not dense punctures. Thorax short, about long as broad, rounded at the sides, and a good deal narrowed behind; the front much rounded, so that the front angles are quite rounded, with a series of punctures on each side of the middle, leaving between them a broad, impunctate space, and outside these with some punctures, which are most numerous behind the middle; it is black and shining, and shows at the base, in the middle, a very short and fine channel. Scutellum rather coarsely punctured, the punctures disappearing towards the apex. Elytra much longer than the thorax, of a pitchy-black colour, rather finely and closely punctured, the punctures rather closer at the extremity than at the base. Hind body elongate and narrow, less depressed than the front parts; the dorsal plates are convex, so that it is subcylindric, and the lateral margins are extremely fine; it is a good deal narrowed towards the extremity, and also has the basal segment slightly narrower than the following ones; it is quite black in colour, and is rather coarsely but not altogether densely punctured. The legs are pitchy.

In the individual described, which I believe to be a

female, the apical segment has a lateral style on each side, and two more slender ones between them.

A single specimen was found by Mr. Bates, but it bears no special indication of locality.

## Diochus.

This genus consists of seven described species, found in widely separated parts of the world, and I now add four new species from the Amazons; these call for no special remark, as they appear to be extremely closely allied to one another.

The genus is one of considerable importance, notwithstanding the insignificant and unattractive appearance of the species which compose it. Some years ago, I examined it, and came to the conclusion that it could not be satisfactorily classed with the *Xantholinini*, with which it is usually associated. On glancing at some of its points of structure again, I am inclined, however, to suspect that it may prove to be one of the earliest and least specialized forms of the *Xantholinini*, and that a careful study of its peculiarities may throw considerable light on the nature of the modifications distinctive of that group, as well as suggest the species of the *Staphylinini*, with which the *Xantholinini* are most directly connected.

1. *Diochus longicornis*, n. sp. Obscure rufo-testaceus, nitidus, capite elytrisque circa scutellum infuscatis. Long. corp. 2 lin.

At once distinguished from *D. flavicans* by the much longer antennæ. These are slender and reach not quite to the extremity of the thorax; they are of a yellow colour; 3rd joint is long and slender, longer than the 2nd; from 4—10 each is a little shorter than its predecessor, even the 10th considerably longer than broad. Head pitchy-red, slightly narrower than the thorax, very little narrowed in front, the front part indistinctly punctured, the punctures placed in irregular lines. Thorax a little narrower than the elytra, longer than broad, very slightly narrowed in front, dusky reddish-yellow, with four punctures near one another on the middle, behind; in front of these with two others farther apart, and with four or five others on each side. Elytra hardly so long as the thorax, yellow, darker about the scutellum, sparingly and very

indistinctly punctured. Hind body dusky yellow, extremely finely and densely punctured. Legs yellow.

Tapajos; seven specimens.

2. *Diochus vicinus*, n. sp. Rufescens, capite elytrisque infuscatis, his apice dilutioribus; antennis tenuibus, sat elongatis. Long. corp. 2 lin.

Antennæ reddish, not thickened towards the extremity, moderately long; 3rd joint elongate and slender; 4—10 each is a little shorter, but scarcely visibly broader, than its predecessor, the 10th quite as long as broad; 11th joint much acuminate. Head small, infuscate-red. Thorax bright reddish-yellow. Elytra about as long as the thorax, infuscate-red, with the hind margin paler, shining, with a few indistinct punctures. Hind body dark red, densely and finely punctured. Legs yellow.

Tapajos; three specimens.

*Obs.*—This species is extremely similar to *D. longicornis*, but the antennæ are less elongate.

3. *Diochus tarsalis*, n. sp. Rufo-fuscus, antennis pedibusque testaceis, illis sat elongatis; tarsis anterioribus dilatatis. Long. corp. 2 lin.

Antennæ moderately slender, reddish; 3rd joint slender and elongate; 4—10 each a little shorter, but scarcely visibly broader, than its predecessor; 10th about as long as broad, 11th much acuminate. Palpi yellow. Head infuscate-red, impunctate along the middle, with a few punctures at the sides. Thorax infuscate-red, rather brighter in colour than the head, with the usual punctuation. Elytra about as long as the thorax, infuscate-red, shining, with a few impressed punctures. Hind body densely punctured, blackish-red, with the hind margins of the segments red, the hind part of the two slender and elongate apical segments broadly red. Legs yellow, front tarsi rather strongly dilated.

Tapajos; three specimens.

*Obs.*—This species is extremely similar to *D. longicornis* and *D. vicinus*, but is rather darker in its colouration, and has the front tarsi a good deal dilated, while in the two species named they are nearly simple.

4. *Diochus flavicans*, n. sp. Rufo-testaceus, nitidus,

antennis articulis 3—10, elytrisque basi infuscatis. Long. corp. 1⅓ lin.

Antennæ considerably longer than the head, the two basal joints and the last joint yellow, the others infuscate; 3rd joint about as long as 2nd, 6—10 rather transverse. Head narrower than the thorax, narrowed in front, reddish-yellow, convex, the front part sparingly and indistinctly punctured, the vertex smooth. Thorax a little narrower than the elytra, considerably longer than broad, distinctly narrowed in front, the sides slightly curved; it is reddish-yellow, and has four punctures placed near one another on the middle, behind; in front of these, two others much farther apart, and on each side five or six other punctures near the lateral margin. Elytra scarcely so long as the thorax, yellowish, indistinctly darker near the base, sparingly and indistinctly punctured, the punctures disposed in lines. Hind body dusky yellowish, very finely and densely punctured. Legs pale yellow. Front tarsi not dilated.

Tapajos; two specimens.

## Sterculia.

This genus consists at present of six species, all peculiar to South America, and I here describe seven new ones. The genus contains two apparently distinct groups: the first of these consists of large and brilliant species, which are amongst the most splendid of the *Staphylinidæ;* the species, however, bear such an extreme resemblance to one another, that, although I have twenty different forms belonging to it separated in my collection, I am by no means sure how many species they represent: the second group consists of black and rather smaller species, which have the mandibles much less elongate than the metallic species. *S. amazonica*, *S. pauloensis* and *S. discolor* belong to the group of metallic species, while the other four here described are black species with short mandibles.

1. *Sterculia amazonica*, n. sp. Cyanea, nitida, thorace elytris breviore, capite oblongo, subtus lateribus parce punctato, medio lævi, mandibulis capite brevioribus. Long. corp. 10 lin.; lat. elytrorum apice 2⅓ lin.; prothoracis basi 1½ lin.

Antennæ rather stout, not thickened after the 4th joint; 3rd joint about twice as long as 2nd, 4—10 transverse;

the three basal joints blue, the rest obscure. Palpi stout. Mandibles about two-thirds of the length of the head. Head quite as broad as the greatest width of the thorax, its width about as great as from the front of the eyes to the back of the head; the whole of the upper surface densely, evenly and coarsely rugose-punctate, beneath very shining, the punctures there about twenty-four on each side; those at the back angles small, the others very large, the middle part quite free. Thorax considerably longer than broad, a little narrowed from the base to the middle, more narrowed from the middle to the front; a deep oblique impression on each side, near the back; the sides in front of the impression rather sparingly punctured, a broad middle line impunctate. Elytra longer than the thorax, finely and sparingly punctured. Hind body very shining, very finely and very sparingly punctured. Legs violet. Hind body beneath less sparingly and finely punctured than above.

Ega; six individuals.

*Obs.*—These specimens vary somewhat in their colour, which is sometimes purple, sometimes of a bluer or greener tint; the punctures also on the underside of the head are more numerous and distinct in some individuals than in others. Two specimens have the 7th segment beneath a little depressed in front of the hind margin, and more finely punctured and pubescent, the hind margin itself being very slightly emarginate; I think they are probably males.

2. *Sterculia pauloensis*, n. sp. Cyanea, nitida, thorace elytris breviore, capite oblongo, subtus basin versus parcius punctato, mandibulis capite brevioribus. Long. corp. 12 lin.; lat. elytrorum apice $2\frac{2}{3}$ lin.; prothoracis basi $1\frac{5}{8}$ lin.

Very closely allied to the preceding species, but larger, and with the mandibles a little longer, the head and thorax broader, the head being distinctly broader than the thorax, while the thorax is less slender in front; the punctures on the under side of the head are only eleven in number, smaller punctures near the hind angles being quite absent.

St. Paulo; a single individual.

*Obs.*—It is quite possible this may not prove to be a distinct species from the *S. amazonica*, which, as I have above noticed, appears to be somewhat variable.

3. *Sterculia discolor*, n. sp. Supra violacea, abdomine aureo-purpureo, subtus viridi-cærulea, nitida, capite oblongo, mandibulis hoc brevioribus, thorace elytris vix breviore. Long. corp. 9—11 lin.

Readily distinguished from *S. amazonica* by the discordant colour of the hind body above, as well as by the much less transverse penultimate joint of the antennæ. Antennæ rather long, reaching more than half-way to the back of the thorax, not thickened after the 4th joint; the three basal joints violet, the others dusky; from 6—10 each joint is a little longer than the preceding one, so that the 10th is considerably longer than the 6th. Mandibles much shorter than the head. Head rather narrow, considerably longer than broad, slightly broader than the thorax; the eyes distinctly prominent; it is of a violet colour above, densely and coarsely rugose-punctate; beneath it is shining blue, sparingly punctured on each side with about fourteen punctures. Thorax one and a half times as long as broad, gradually narrowed from the base to the front, with an oblique impression on each side before the base, a space along the middle smooth; the sides rather sparingly punctured, more closely at the front than elsewhere. Elytra much broader and slightly longer than the thorax, of a dark-violet colour, finely and moderately closely punctured. Hind body above of a brilliant golden purple, or copper colour, sparingly and finely punctured, beneath brilliant green. Legs violet; pubescence of the tibiæ conspicuous, being nearly white.

In the male the hind margin of the 7th segment beneath is less rounded than in the female, and the punctuation in front of this is a little denser and finer.

Ega; six specimens.

*Obs.*—This species is very closely allied to the Bolivian *S. splendens*, but is rather more slender, and has the mandibles shorter; the antennæ are considerably shorter, and the sculpture of the head at the vertex is less dense and rugose.

4. *Sterculia funebris*, n. sp. Nigro-subænea, opaca, densius subtiliusque punctata, thorace lineâ mediâ lævi, elytris thorace brevioribus. Long. corp. 9 lin.

Antennæ black, rather stout, reaching about half-way to the back of the thorax, a little thickened from the 4th to the 10th joint; 3rd joint considerably longer than 2nd,

this latter red at the extreme base; joints 4—10 strongly transverse, scarcely differing in length. Mandibles about half as long as the head. Head slightly narrower than the thorax, considerably longer than broad, oblong, the hind angles much rounded, but the sides straight; above black, and quite dull, with a very faint brassy tinge, extremely densely and finely rugulose-punctate, with a very dense, short and fine erect pubescence; lateral grooves broad, shallow and densely punctured, these limited on the underside by a smooth, rather elevated line, the rest of the under surface coarsely and numerously punctured; punctuation at the hinder part fine and dense, passing gradually into that of the upper surface. Thorax about two-thirds of the width of the elytra; its length quite one and a half times its width, slightly broader from the base to a little in front of the middle, thence much narrowed and rounded to the front, extremely densely and finely punctured, with an extremely short and fine, erect pubescence, quite dull, with a middle line smooth, shining and impunctate; it is also slightly transversely impressed some distance in front of the base, and in this transverse impression the smooth middle line is very nearly interrupted; it is similar in colour to the head. Elytra with their greatest length (*i. e.*, measured from the humeral angle to the outer apical angle) just equal to that of the thorax, extremely densely and finely punctured and pubescent, opaque black. Hind body rather shining, brassy black, extremely finely and rather closely punctured, and delicately pubescent. Legs blackish, the tarsi pitchy; the inside of the tibiæ with a dense-grey pubescence.

Ega; four specimens; sex unknown.

*Obs.*—This species is clearly closely allied to *S. formicaria*, Er., but contradicts his description in several important points. *S. formicaria* was originally described by Laporte, but his description and figure are quite worthless, and it is impossible to decide whether they relate to Erichson's species or not. Erichson places as synonyms of *S. formicaria*, the *flagellicornis* and *pubescens* of Nordmann; these two descriptions are very carefully drawn up by Nordmann, and it appears to me clear that they refer to two distinct species, and are erroneously united by Erichson under the name of *formicaria*. Hence I consider the name *formicaria* should be entirely dropped, and Nordmann's *flagellicornis* be used instead, leaving it to a comparison of the types (in the Museum at Berlin, sec.

Nordmann) to determine whether my opinion as to *pubescens*, Nord., being a distinct species be correct. A specimen from Laporte's collection is in my possession, belonging to a closely allied but distinct species from *S. funebris*, but whether it be the individual from which he drew his description of *S. formicaria* I cannot say, though it bore that name in his collection.

5. *Sterculia fimetaria*, n. sp. Nigro-ænea, nitida, capite oblongo-ovali, opaco; thorace crebre punctato lineâ latâ impunctatâ, elytris hoc brevioribus. Long. corp. 6—7 lin.

Antennæ stout, much thickened to the extremity, the scape pitchy, the flagellum obscure ferruginous; 3rd joint not quite one and a half times so long as the 2nd; 4—10 transverse, differing but little in length, but the 10th quite twice the width of the 4th; 11th joint stout and rather short, notched on one side at the extremity. Mandibles pitchy, very short; palpi reddish. Head narrow, scarcely so broad as the thorax, nearly twice as long as broad, coarsely and closely punctured, a little smooth in the middle near the front; beneath it is shining and irregularly punctured, the punctures there moderately coarse, with some coarser ones towards the front in the middle; the lateral grooves narrow and punctured, the smooth space limiting them beneath broad and distinct. Thorax elongate, nearly twice as long as broad, about half the width of the elytra, the sides nearly straight from the base to in front of the middle, then gently narrowed; it is brassy black, the middle broadly smooth, very shining and impunctate, the sides evenly, moderately closely, and moderately coarsely punctured; the pubescence scanty, the oblique impressions quite obsolete. Elytra rather shorter than the thorax, brassy, rather shining, finely and rather closely punctured, with a fine erect pubescence. Hind body brassy, finely and closely punctured and pubescent. Legs pitchy black; tarsi paler.

In the male the hind margin of the 7th segment beneath is a little emarginate, and just in front of this the segment is rather more closely and finely punctured.

Ega; three individuals, two ♂, one ♀.

*Obs.*—One of these specimens is labelled by Mr. Bates as found under dung.

6. *Sterculia clavicornis*, n. sp. Nigro-ænea, nitida,

capite opaco, crebre subtiliter punctulata, thorace lineâ mediâ lævi; antennis pedibusque obscure ferrugineis. Long. corp. fere 6 lin.

Allied to *S. fimetaria*, but very distinct by its smaller and shorter head, which is very differently punctured beneath. The antennæ are stout, much thickened towards the extremity, dark reddish, the basal joints pitchy; 3rd joint longer than 2nd; 4—10 very short and broad, not differing from one another in length, 10th nearly twice as wide as the 4th; 11th joint short, stout and pointed, not oblique at the extremity. Mandibles pitchy, very short; palpi yellowish. Head rather longer than broad, nearly straight at the sides, but greatly rounded at the back, about as broad as the thorax; above quite dull, densely rugulose-punctate, the punctuation at the back very fine, the pubescence dense and rather long; beneath closely punctured at the sides, more sparingly and coarsely towards the middle, the lateral grooves closely punctured, not deep, and not separated from the part beneath by any distinct smooth space. Thorax much narrower than the elytra, nearly twice as long as broad, slightly broader from the base to in front of the middle, then narrowed to the front; the sides are rather closely and not very finely punctured, with an impunctate space along the middle, the oblique impression not well marked, the pubescence rather dense. The elytra are rather shorter than the thorax, moderately finely and rather closely punctured, with a rather long pubescence; like the thorax, of a shining brassy-black colour. Hind body closely and finely punctured, with a dense soft pubescence. Legs pitchy red; the tibiæ on the inside with a grey pubescence.

Obydos; one specimen, probably a female.

7. *Sterculia minor*, n. sp. Nigro-ænea, nitida, capite opaco, thorace elytrisque crebre subtilissime punctulatis, illo lineâ mediâ lævi; capite subtus crebrius punctato, sulcis lateralibus nullis. Long. corp. $5\frac{1}{2}$ lin.

Closely allied to *S. clavicornis*, but with the head and thorax rather broader, the punctuation of the thorax and elytra much finer, and the head without any lateral grooves. The antennæ are rather stout, nearly black, the extreme base of the 2nd joint red; 3rd joint considerably longer than the 2nd; 4—10 each a little stouter than the preceding one, transverse, differing but little in length,

10th not twice as wide as the 4th; 11th joint rather long, pointed and obliquely sinuate at the extremity. Mandibles short, pitchy. Head almost as broad as the thorax, oblong, nearly straight at the sides, the hind angles rounded, above very densely rugose-punctate, quite dull, brassy black, the pubescence dense, especially at the back; beneath it is shining and rather closely punctured, the punctures coarser in the middle than at the sides, a narrow line in the middle smooth. Thorax considerably narrower than the elytra, one and a half times as long as broad, in the middle slightly broader than at the base, then narrowed to the front, oblique impression rather distinct, a space along the middle smooth; the sides closely and very finely punctured, the pubescence rather dense. Elytra about as long as the thorax, closely and very finely punctured, brassy black like the thorax. Hind body finely and moderately closely punctured, brassy black, pubescent. Legs nearly black; tibiæ on the insides with a grey pubescence.

Fonteboa and Ega; two specimens, probably females.

### Agrodes.

This genus was established by Nordmann for an elegant South American species, but was united with *Sterculia* by Erichson. The genus appears to me, however, to be so distinct, that I have used Nordmann's name as indicating a separate genus. The differences in the trophi from *Sterculia* (*Arœocmemis*, Nordmann), are accompanied by a marked distinction in the form of the head, and by a greater development of the prosternum in *Agrodes*, and these appear to me sufficiently important and constant to justify the acceptation of Nordmann's two genera. The species of *Agrodes* appear to be excessively rare; so much so, that I have never seen any other specimens of it than the two individuals here described as two distinct new species.

1. *Agrodes conicicollis*, n. sp. Cyanea, nitida, thorace elytrisque parce subtiliter punctulatis, illo elongato; capite subtus sat crebre punctato, mandibulis hoc duplo brevioribus. Long. corp. 8 lin.

Antennæ rather stout, the three basal joints black, with a bluish tinge, the 2nd red at the extreme base, 4—10 pitchy; 3rd joint nearly one and a-half times longer than

2nd; 4—10 very similar to one another in length, and each scarcely stouter than the preceding; the last joint sinuate at the extremity. Mandibles nearly one-half as long as the head. Head as broad as the thorax, the hind part gradually narrowed into the neck; it is scarcely shorter than the thorax, considerably longer than broad; above it is densely and coarsely rugose-punctate, and with a rather long pubescence, beneath it is very shining and rather sparingly punctured; the lateral grooves are absent, but a raised, smooth space, proceeding from the base of the mandible, indicates what should be the boundary of the groove beneath. The thorax is elongate, about twice as long as broad, about half as broad as the elytra; it is nearly straight at the sides from the base to the middle, thence narrowed to the front; it is of a shining-blue colour, finely and rather sparingly punctured, with an impunctate space along the middle. Elytra scarcely so long as the thorax, and darker in colour, rather finely and sparingly punctured. Hind body shining blue, finely and rather sparingly punctured. Legs bluish, tibiæ with a grey pubescence on the inside.

Ega; one specimen, probably female.

2. *Agrodes longiceps*, n. sp. Cyanea, nitida, thorace elytrisque subtiliter punctulatis, illo elongato; capite subtus dense grosseque punctato, mandibulis hoc plus duplo brevioribus. Long. corp. $8\frac{1}{2}$ lin.

Allied to the preceding species, but with the head differently formed, and closely and coarsely punctured beneath. The antennæ are nearly black, with the three basal joints bluish; the extreme base of the 2nd joint red; they are not thickened after the 4th joint, joints 4—10 scarcely differing in length and breadth; last joint sinuate at the extremity, ferruginous at the tip. Mandibles not half the length of the head. Head long and narrow, with the eyes very prominent; it is about as long and about as broad as the thorax, the hinder part much narrowed to the neck; it is above densely rugose-punctate, of a violet colour, not shining, with a rather dense pubescence; beneath it is very shining, closely and very coarsely punctured, without any trace of lateral grooves. Thorax considerably more than half the width of the elytra, nearly twice as long as broad, nearly straight at the sides

from the base to the middle, thence narrowed to the front; it has a smooth space along the middle, and is finely punctured at the sides, the transverse impression on each side well marked. Elytra not so long as the thorax, darker in colour, finely and sparingly punctured. Hind body shining blue, finely and rather sparingly punctured. Legs blue.

Tunantins; one specimen, sex unknown.

### Tesba.

Antennæ fractæ.

Labrum totum corneum, sexdentatum.

Palpi maxillares filiformes, labiales articulo ultimo oblongo.

Prothoracis linea marginalis externa integra.

Prosternum inter coxas anticas processu verticali acuminato munitum.

Corpus magnum, robustum. Frons inter antennas fortiter carinato-compressa. Labrum porrectum, sexdentatum, margine longe setoso. Mandibulæ validiores, medio dentatæ. Maxillæ malâ exteriore corneâ, apice extrorsum setoso, introrsum barbato. Palpi maxillares articulo primo minuto, secundo basi angustato, tertio hoc paulo breviore, quarto tertio longiore. Palpi labiales articulo secundo basi angustato, tertio oblongo, præcedente longiore. Antennæ basi valde approximatæ, articulo primo leviter curvato. Prothorax lineâ marginali superiore integrâ, in lineam marginalem anticam continuatâ, lineâ inferiore paulo ante marginem anticam desinente, superiore haud conjunctâ. Prosternum medio processu acuminato munitum. Tibiæ omnes fortiter spinulosæ, anticæ leviter incrassatæ; tarsis anticis subdilatatis, articulo primo sequentibus multo longiore.

Genus *Xantholininorum* insignis, *Scytalino* affinis.

This genus differs from *Scytalinus* by the presence of the upper line of the side piece of the thorax, by the thick antennæ, which are more approximate at their insertion and separated by a compressed carina-like space, as well as by its much more robust build. I have a third species found by Mr. Belt in Central America, and the nearest allies known to me are some undescribed species from Natal and Madagascar; in the Natal species the antennæ are extraordinarily thick, and separated at their insertion only by a thin lamina.

1. *Tesba gigas*, n. sp. Nigra, sat nitida, capite crebre punctata, antennis articulis 4—10 leviter transversis. Long. corp. 15 lin.; lat. (abdominis) $2\frac{2}{3}$ lin.

A giant among the *Xantholinini*. Head broader than the thorax, quite as broad as the elytra, not quite so long as broad, narrowed to the front, at the back part with numerous coarse round punctures, in front of these with finer oblong ones, the very front part without punctures; beneath coarsely and rather sparingly punctured, at the hind angles with a sinuate suture. Palpi reddish. Antennæ black, the first three joints shining, the rest pubescent; the 1st joint long and stout, 3rd rather longer than 2nd; 4—10 not at all thicker from the 4th joint to the extremity, and with little difference in the length of these joints; last joint about twice as long as the 10th, obtusely pointed. Thorax narrower than the elytra, narrowed behind, considerably longer than broad, black and shining, with a very fine and short impressed line in front of the scutellum, with a coarse puncture on each side near the front angles, and at the front angles with several other finer punctures; also on each side the disc, a little behind the middle, is a single puncture, and between this and the front are two or three others on each side placed close together, and numerous others close to the lateral margin. Scutellum with three or four punctures in the middle. Elytra about as long as the thorax, black, rather coarsely and sparingly punctured, the punctures closer near the suture than elsewhere, with a few fine setæ. Hind body broad, black, rather closely and sparingly punctured, with long rufescent setæ, especially distinct at the sides; 8th segment pitchy. Legs black, with the tarsi pitchy.

St. Paulo; one specimen.

2. *Tesba laticornis*, n. sp. Nigra, nitida, capite dense rugoso-punctato, antennis articulis 4—10 valde transversis. Long. corp. 9 lin.; lat. (abdominis) $1\frac{5}{8}$ lin.

Shining black with the exception of the head, this being dull black from its coarse rugose sculpture. Antennæ short and very stout, slightly thickened from the 4th to the 10th joint; 1st joint stout and distinctly curved; 2nd and 3rd joints short, 3rd not so long as broad, shorter than 2nd; joints 4—10 strongly transverse; 11th joint rather short, obtusely pointed. Palpi dark yellowish. Mandibles shining black, stout. Head quite as broad as

the thorax, the upper surface covered with a dense and coarse longitudinally rugose sculpture, the carina between the antennæ smooth and shining, the under surface sparingly but extremely closely punctured, the raised line at the posterior angles continued quite half-way to the base of the mandibles. Thorax nearly as broad as the elytra, a little narrowed behind, about one and a half times as long as broad, smooth and shining, black, with a very coarse puncture on each side near the front angle, with several others quite on the front part, and behind the large puncture with two others on each side placed very near one another; also with several others close to the lateral margin, and with a very fine short line in front of the scutellum. Scutellum very indistinctly punctured. Elytra quite as long as the thorax, shining black, sparingly and rather coarsely punctured, the turned-down part more closely punctured. Hind body shining black, not narrowed till the 5th segment, sparingly and rather coarsely punctured, sparingly furnished with dark outstanding setæ. Legs black; tarsi rufescent.

Tunantins; one individual.

### Lixidius.

Antennæ fractæ.

Labrum totum corneum, transversum, quadridentatum, vel indistincte sexdentatum.

Palpi omnes filiformes.

Prothoracis linea marginalis externa integra; linea interna cum externâ conjuncta.

Genus corporis habitu *Scytalino* affinis. Mandibulæ validæ, medio unidentatæ, basi lobo membraneo instructæ. Labrum breve, transversum, totum corneum, quadridentatum, dentibus intermediis latis, minus distinctis, vix separatis. Maxillæ lobo superiore angusto, apice barbato, angulo externo vix setoso: palpi maxillares articulo tertio secundo paulo breviore, quarto tertio longiore. Palpi labiales articulo ultimo præcedente longiore, apice subacuminato. Antennæ basi sat approximatæ. Frons sulcis duobus antennariis. Prothorax lineâ marginali externâ, ante angulum anticum valde deflexâ, pleuris abbreviatis, linea interna cum externâ conjuncta. Coxæ intermediæ distantes. Tarsi antici articulo basali haud elongato. Generis typus *L. recticollis*.

This genus appears to be intermediate between *Scyta-*

*linus* and *Xantholinus:* the three species I have placed in it will probably be ultimately separated generically; indeed the *L. tenuipes* and *extremus* appear to be congeneric with *Thyreocephalus Jekeli*, Guér.; but as Guérin's genus is not accepted at present, and as the *Linidius recticollis* does not agree therewith, I have associated all the three species under the name *Linidius*, leaving the union of *L. tenuipes* and *L. extremus* with *T. Jekeli*, until the genus *Thyreocephalus* is again rehabilitated. The limits of the genera of *Xantholinini* are, in fact, at present about as uncertain as possible.

1. *Linidius recticollis*, n. sp. Niger, nitidus, elytris cyaneis, fortiter punctatis, capite fortiter minus crebre punctato, prothorace lateribus parallelis. Long. corp. 6 lin.

Antennæ black, the basal joint very slightly curved; 2nd joint short, 3rd considerably longer than 2nd; joints 4—10 differing but little from one another in width or length, transverse; 11th joint short. Palpi pitchy yellow, last joint of the labial a little thickened on the inside. Mandibles short and stout, black. Head about as broad as the thorax, longer than broad, slightly narrowed in front, shining black, coarsely and sparingly punctured, the punctures wanting on the front part; beneath also sparingly and coarsely punctured, the punctures wanting in the middle. Thorax narrower than the elytra, straight at the sides, nearly twice as long as broad, shining black, and only punctured at the sides and front angles. Scutellum with four or five coarse punctures. Elytra scarcely so long as the thorax, dark shining blue, coarsely and moderately closely punctured. Hind body shining black, sparingly pubescent, rather narrowed towards the extremity, sparingly and rather coarsely punctured. Legs pitchy black.

Ega; one specimen.

2. *Linidius tenuipes*, n. sp. Niger, nitidus, elytris cyaneis, fortiter punctatis, ano ferrugineo, capite lateribus et vertice punctatis, utrinque pone oculos punctis duobus majoribus. Long. corp. 7 lin.

Antennæ but little longer than the head, not thickened after the 4th joint; 3rd joint much longer than 2nd; 4–10 transverse, differing very little from one another; last joint rather small, obtusely pointed. Palpi dusky yellow. Mandibles moderately long, shining black. Head broad, rather broader than the thorax, about as broad as the elytra,

shining black, the whole of the middle part impunctate, a row of coarse punctures at the back, two other coarse punctures near the inner hind angle of the eye, and another on each side between the eyes, the sides behind the eyes with finer punctures; the under surface is also impunctate, except at the sides. Thorax a little narrower than the elytra, slightly narrowed behind, not twice as long as broad; black, shining and impunctate, except a few punctures near the front angles. Scutellum with four or five coarse punctures. Elytra not quite so long as the thorax, dark shining blue, rather coarsely punctured. Hind body shining black, hind portion of the 6th and the whole of the 7th segment dark reddish, sparingly punctured. Legs pitchy black; tarsi slender.

Ega; one specimen.

3. *Linidius extremus*, n. sp. Niger, nitidus, elytris cyaneis fortiter punctatis, ano rufo-testaceo; capite lato, fere circulari, lateribus et vertice punctatis, utrinque pone oculos punctis tribus majoribus. Long. corp. 7 lin.

This insect so greatly resembles the *L. tenuipes*, that a reiterated description is useless. In *L. extremus* the head is broader, more curved at the sides, and so more circular in form; the punctures at the side of the head are more closely packed, and on each side, just behind and internal to the eye, are three larger punctures, placed near to one another, so as to form a triangle. The extreme vertex, as in *L. tenuipes*, bears sparing coarse punctures. The basal portion of the mandibles is more slender than in *L. tenuipes*, and the legs and tarsi are even a little more slender than in that species.

Upper Amazons; a single individual found by Mr. Bates.

## Xantholinus.

Under this generic name there are at present placed something more than one hundred species, found in all parts of the world. I enumerate here ten Amazonian species, seven of which are new; but I have no doubt the species to be found in this rich valley are very much more numerous than this. The genus at present contains a number of very different forms, some of which have been considered by some authors as distinct genera, but have not been generally received as such at present. About thirty species from South America have been as yet de-

scribed, and it is in this part of the world that the largest and most brilliant of the forms included in the genus are found.

1. *Staphylinus rutilus*, Perty.

Pará, Ega, Tapajos.

The fine series brought back by Mr. Bates of this species show that it varies much in size, large individuals being 9 lin. in length, and the smallest only about 5 lin.; the yellow colour of the extremity of the hind body is in the larger individuals nearly entirely absent.

2. *Eulissus Mannerheimii*, Lap.

Pará, Tapajos, Ega.

This species, recorded hitherto only from Cayenne, appears to be not uncommon in the Amazon valley.

3. *Xantholinus bicolor*, n. sp. Fulvus, nitidus, capite nigerrimo, minus crebre punctato, medio lævi; prothorace serie dorsali subtiliter bi- vel tri-punctato, propeque angulos anteriores parce punctato; elytris subtiliter punctatis. Long. corp. 7 lin.

Slightly larger than *X. glabratus*, of a shining-tawny colour, elytra rather paler and the head black. Antennæ with the three basal joints dark red, the rest pitchy; the 11th joint yellowish at the extremity; 3rd joint nearly twice as long as 2nd; joints 4—10 scarcely differing from one another in length, and only very slightly in width, transverse; 11th joint pointed, about twice as long as the 10th. Palpi reddish. Mandibles short, stout, black, pitchy at the base; labrum considerably advanced, rounded in front, with a deep narrow division in the middle, apparently entirely horny. Head rather broader than the thorax, about as broad as the elytra, a little narrowed in front, black and shining, the disc impunctate; the sides and the under surface sparingly and rather finely punctured. Thorax rather narrower than the elytra, considerably longer than broad, narrowed behind, very shining reddish-tawny; a little in front of the middle on each side is a single puncture, and behind this 1—3 others; there are also five or six larger punctures near the front angle on each side. Scutellum obsoletely punctured. Elytra as long as the thorax, yellow, rather sparingly and finely punctured, the punctures arranged in indistinct lines.

Hind body dark tawny, sparingly punctured, and with a scanty but rather long concolorous pubescence. Legs yellowish; tibiæ darker than the femora.

Ega; five specimens.

4. *Xantholinus anticus*, n. sp. Subdepressus, nitidus, rufus, capite, prothorace anterius abdomineque nigris, hoc apice rufo; capite parce fortiter punctato; thorace versus angulos anteriores utrinque 4- vel 5-punctato, serie dorsali nullâ; elytris obsolete punctatis. Long. corp. 5 lin.

Antennæ dark red, short and stout, basal joint curved, and towards the extremity thickened, as long as the four or five following ones together; 2nd and 3rd joints short, the latter slightly the longer, 4th joint transverse, 5—10 differing little from one another, each strongly transverse; 11th joint stout and obtusely pointed, rather paler at its extremity. Mandibles pitchy red; palpi red, the labial ones scarcely thickened. Head black, rather broader than the thorax, with the frontal furrows rather curved, and each at its extremity bearing punctures; along the sides are placed distant coarse punctures, and at the extreme vertex there are also some punctures, the hind angles are rounded; there is a longitudinal channel extending from the vertex to near the frontal furrows; beneath there is a strigose sculpture on each side. Thorax red, with the anterior part black; it is longer than broad, a good deal narrowed behind, and it is impunctate except for four or five punctures on each side near the front angles. Scutellum red, large, bearing only three or four not very distinct punctures. Elytra red, as long as the thorax, each bearing two or three not very distinct series of longitudinal punctures, and also obsoletely rugulose. Hind body black, with the 7th segment and the 6th, except at its base, red; the segments only very sparingly punctured. Legs red.

Rio Purus; a single individual, found by Dr. Trail on the 24th September, 1874.

5. *Xantholinus pygialis*, n. sp. Niger, nitidus, capite, thorace elytrisque læte violaceis, ano testaceo, pedibus piceis, capite thoraceque lævissimis. Long. corp. 6 lin.

Antennæ short, but little longer than the head, pitchy, the basal joint about as long as the six following; 3rd joint longer than 2nd; joints 4—10 transverse, similar in

length, 10th considerably broader than the 4th; 11th joint yellowish at the extremity, obtusely pointed. Palpi yellowish; mandibles rather long and slender at the extremity. Head as broad as the thorax, much narrowed in front, the hind angles rounded, with an elongate oblique puncture on each side between the eyes, a similar one behind the eye, and one or two other punctures near the back; otherwise impunctate, very shining, and of a beautiful violet-blue colour. Thorax a little narrower than the elytra, longer than broad, straight at the sides, similar in colour to the head, very shining, with three or four coarse punctures on each side close to the front; otherwise impunctate. Scutellum with three or four punctures. Elytra shining dark blue, quite as long as the thorax, sparingly but rather coarsely punctured. Hind body shining black, the hind margin of the 6th and the whole of the 7th segment bright yellow, very sparingly punctured. Legs and prosternum pitchy.

Ega; one specimen.

6. *Xantholinus temporalis*, n. sp. Niger, nitidus, capite thoraceque violaceis, elytris nigro-cyaneis, ano flavo; thorace ad angulos anteriores parce punctato. Long. corp. $7\frac{1}{2}$ lin.

This insect is peculiar by the very thick hind part of the head and by a peculiar form of the mandibles. Antennæ rather longer than the head, nearly black; 3rd joint nearly twice as long as the 2nd; joints 4—10 transverse, scarcely differing in length, but the 10th broader than the 4th; 11th joint obtusely pointed, yellow at the extremity. Palpi slender and elongate, yellowish. Mandibles pitchy black, elongate, the left one longer than the right and much curved towards the extremity, and near the extremity sinuate or emarginate on the upper edge. Head large, broader than the thorax, narrowed in front, the hind angles rounded, the upper surface rather uneven, a puncture on each side between the eyes, a few others on each side near the hind angle and back margin, and behind the eye with a curved broad impression; it is of a shining violet-blue colour, on the under surface but little shining, and there with shallow longitudinally subrugose sculpture. Thorax scarcely narrower than the elytra, rather longer than broad, slightly narrowed behind, similar in colour to the head, impunctate with the exception of five or six

coarse punctures on each side close to the front angle. Scutellum obsoletely punctured. Elytra of a dark-greenish or bluish colour, slightly longer than the thorax, sparingly punctured. Hind body black, the hind margin of the 6th and the whole of the 7th segment yellow, very sparingly punctured. Legs nearly black; tarsi long and slender.

Ega; one specimen.

7. *Xantholinus æneiceps*, n. sp. Piceus, nitidus, capite æneo, lateribus parce punctato, medio lævi, elytris pedibusque testaceis; prothorace serie dorsali irregulari 6—7 punctato, angulosque anteriores versus 7—8 punctato. Long. corp. 3¾ lin.

Antennæ dull yellowish, rather stout, 3rd joint longer than 2nd; 4—10 transverse, 10th broader than 4th; last joint obtusely rounded, paler at the extremity. Mandibles pitchy yellow. Head rather narrow, scarcely so broad as the thorax, shining brassy; the middle part smooth, the sides sparingly, moderately coarsely punctured. Thorax obscure reddish, with a brassy reflection, very slightly narrowed behind; on each side the middle with a very irregular row of about six punctures, and with six or seven other punctures near the front angle. Elytra yellow, about as long as the thorax, rather sparingly and moderately finely punctured. Hind body pitchy, with a brassy tinge; hind portion of the 6th segment paler; sparingly and finely punctured. Legs yellow.

Ega; one specimen.

8. *Xantholinus Batesi*, n. sp. Niger, nitidus, elytris, ano, pedibusque rufis; capite crebre fortiterque punctato; thorace lateribus sat crebre punctato, seriebus dorsalibus irregularibus 10—12 punctatis, lineis marginalibus ad angulum anteriorem conjunctis. Long. corp. 4 lin.

Antennæ with the three basal joints dark red, the following ones obscure; 3rd joint longer than 2nd; joints 4—10 scarcely differing in length, the 4th narrower than the 5th, and much narrower than the 10th; last joint obtusely pointed, paler at the extremity. Mandibles pitchy. Head about as broad as the thorax, narrowed to the front, the upper surface rather coarsely but not closely punctured, the front part impunctate; under surface moderately closely and coarsely punctured. Thorax, like the

head, shining black, much longer than broad, the front and hind angles rounded, the sides nearly straight, a broad space in the middle smooth; on each side with two series of punctures, an irregular, somewhat double series internally, and another irregular series about the outside; beneath, the marginal lines are not joined till the front margin of the prosternum. Scutellum indistinctly punctured. Elytra bright red, about as long as the thorax, rather finely and not closely punctured, the punctures arranged in lines. Hind body black, with the whole of the 6th and 7th segments red, finely and sparingly punctured. Legs reddish-yellow.

9. *Xantholinus amazonicus*, n. sp. Depressus, niger-rimus, nitidus, abdomine segmentis duobus ultimis totis rufo-testaceis; capite subquadrato, antice minus angustato, canaliculato, utrinque sulcato, angulis posterioribus acutis. Long. corp. 7 lin.

It is possible that this insect is a local form of *X. canaliculatus*, Er., from which it differs in the shape of the head, and by the whole of the 6th and 7th segments of the hind body being bright reddish-yellow.

Ega; one individual.

10. *Xantholinus attenuatus*, Er.

Pará; a series of individuals.

This species appears to be one of the most widely distributed and abundant of the South American *Staphylinidæ*.

### Leptacinus.

This genus at present consists of about twenty-five species, distributed over most parts of the globe; only two, however, have as yet been indicated from South America. As regards the single Amazonian species here described, I may remark that it differs much from the ordinary form of *Leptacinus* by its long and slender legs and scarcely spinulose tibiæ, as well as by the greater development of the prosternum; I had at first intended giving it a new generic name, but as the limits of the neighbouring genera are at present uncertain, and as I cannot make a sufficiently complete examination of the only individual I possess, I have decided on calling it *Leptacinus nitidus*.

1. *Leptacinus nitidus*, n. sp. Rufo-piceus, nitidus, pedibus testaceis, capite subtiliter parcissime punctato; prothorace lateribus subtiliter sat crebre punctatis, medio lævi; elytris parce subtilissime punctatis. Long. corp. 2 lin.

Antennæ dull yellowish, stout, thickened towards the extremity; 3rd joint shorter than 2nd; 4—10 very short, and strongly transverse; 11th joint pointed. Head long, straight at the sides, not narrowed in front, the hind angles rounded, the antennal grooves short, indistinct and diverging behind; it is rather convex above, of a very shining-pitchy colour, finely and sparingly punctured, with scanty, fine, but rather long, exserted setæ. Thorax twice as long as broad, narrower than the elytra, nearly straight at the sides, being only very slightly broader in front, all the angles rounded; of a very shining-pitchy colour, the sides evenly and finely but not closely punctured; the middle smooth, with a few long, exserted setæ at the sides. Scutellum shining, depressed in the centre, impunctate. Elytra scarcely so long as the thorax, of a shining pitchy-yellow colour, very finely and sparingly punctured. Hind body cylindric, pitchy, shining, rather sparingly and very finely punctured. Legs yellow; tarsi slender.

Ega; one specimen.

### Lithocharodes.

Antennæ geniculatæ.

Labrum medio profunde triangulariter excisum.

Palpi articulo ultimo subulato, præcedente multo breviore.

Elytra suturâ imbricatâ.

Coxæ intermediæ distantes.

Tarsi antici simplices.

Prothoracis linea marginalis superior caret.

Mandibulæ validæ, breviores. Palpi labiales articulis duobus primis crassiusculis, subæqualibus; articulo ultimo tenuissimo, præcedente breviore. Antennæ crassiusculæ, sat elongatæ. Pedes elongati, femoribus linearibus. Abdomen apicem versus paulo latius.

This genus seems to be most allied to *Leptolinus*, from which it differs by the simple undilated front tarsi, and by its much shorter maxillary palpi; the single species I refer to it differs much in appearance from *L. nothus*, on account of its shining and sparingly punctured surface. In these

respects it approaches *Typhlodes*, but it would not be proper to associate it at present in the same genus with the eyeless *T. italicus*.

1. *Lithocharodes fuscipennis*, n. sp. Rufo-testaceus, nitidus, elytris fuscis, apice summo pedibusque testaceis; capite prothoraceque subtiliter punctatis, hoc lineâ mediâ impunctatâ. Long. corp. $2\frac{1}{4}$ lin.

Antennæ about as long as the head and half the thorax, stout, thickened towards the extremity, reddish; 3rd joint shorter than 2nd; 4—10 transverse, not differing in length, but the 10th twice as broad as the 4th; 11th joint stout and pointed. Head rather broader than the thorax, longer than broad, a little narrowed to the front, the hind angles rounded, the antennal grooves very fine; it is of a shining-reddish colour, convex above, rather finely and moderately closely punctured; the back, and a line along the middle, smooth; on the under surface it is sparingly and finely punctured in front, impunctate behind. Thorax rather narrower than the elytra, twice as long as broad, rather dilated in front, the front angles very rounded; it is of a shining reddish-yellow colour, at the sides finely and rather sparingly punctured, a broad line down the middle smooth. Scutellum with one or two indistinct punctures on each side. Elytra not so long as the thorax, pitchy, with the extremity yellow, very finely and sparingly punctured. Hind body yellow; the 6th segment much longer than the others, and a little infuscate, extremely finely and rather sparingly punctured. Legs yellow.

Tapajos; one specimen.

## Metoponcus.

This generic name is applied by Kraatz to designate the species forming Family I, of Erichson's genus *Leptacinus*. It at present covers only seven species found in Eastern Europe, tropical Asia, and South America. I refer three Amazonian species to the genus, one of which, however, viz. *M. holisoides*, is very different in its appearance from the others, and will almost undoubtedly be ultimately considered a distinct genus; but I have not been able in my examination of the only individual I have seen of the species to detect characters that would justify me in making a new generic name at present for it.

1. *Leptacinus filarius*, Er.

Ega; Bates; a single individual; a second specimen, from the Amazons, has also been given me by Dr. Trail.

2. *Metoponcus basiventris*, n. sp. Elongatus, angustus, subdepressus, nitidus, piceus, abdomine basi pedibusque testaceis; abdomine segmentis duobus ultimis obscure rufis, segmentis singulis subtus medio flavescentibus. Long. corp. 2⅓ lin.

Antennæ short and stout, scarcely so long as the head, obscure reddish; 3rd joint very small, smaller than the 2nd, not longer than broad; 4th joint much narrower than 5th, 5—10 strongly transverse; last joint paler than the rest. Head elongate, quite as broad as the thorax, the sides straight; smooth and shining, on the under surface with longitudinal channel along each side. Thorax nearly as broad as the elytra, much longer than broad, nearly straight at the sides; like the head, of a pitchy colour, and with only one or two fine punctures; superior marginal line wanting. Scutellum impunctate. Elytra pitchy yellow, about as long as the thorax, scarcely punctured; suture indistinctly imbricate. Hind body elongate and parallel; the first visible segment pale yellow, the next three pitchy, the two last dark reddish; it is shining and impunctate; below each segment is pale in the middle. The legs are pale yellow, the femora stout; the front tarsi simple, the four hinder ones very slender; the hind tibiæ a little curved at the base.

St. Paulo; one specimen.

3. *Metoponcus holisoides*, n. sp. Depressus, nigro-piceus, nitidus, antennis obscure rufis, pedibus piceis, elytris piceo-testaceis. Long. corp. 2½ lin.

Very depressed and rather narrow. Antennæ about as long as the head, obscure red, not very stout; 3rd joint smaller and shorter than 2nd, 4th about equal to 3rd, 5—10 transverse; 11th joint paler than the rest. Head slightly broader than the thorax; at the sides with two elongate punctures in a line behind the eyes, otherwise impunctate, but extremely finely longitudinally strigose, both above and below; the middle grooves between the antennæ short, but distinct; no channel on the under surface at the side. Thorax scarcely narrower than the

elytra, scarcely narrowed behind; one and a half times as long as broad, with four punctures in a transverse line across the middle; exterior marginal line short and indistinct, terminating at the corner of the coxal cavity. Elytra about as long as the thorax, sordid testaceous, extremely finely punctured. Hind body impunctate. Legs pitchy yellow; femora very stout.

Ega; one specimen.

### Ophites.

This genus at present contains three very remarkable species, described by Erichson, from South America; it appears to me to approach very closely to *Cryptobium*, though Erichson interpolates many genera between the two. The single remarkable Amazonian species I here describe has the head more abruptly narrowed, to form a slender neck, than is the case in the species described by Erichson, and its general appearance is rather that of a *Stilicus* than a *Cryptobium;* it also has the antennæ and palpi shorter and stouter than in *O. velitaris* and *Raphidioides*.

1. *Ophites stilicoides*, n. sp. Piceus, opacus, antennis pedibusque rufis, omnium dense subtilissimeque punctulatus. Long. corp. $3\frac{1}{3}$ lin.

This insect has very much the form of an elongate *Stilicus*. It is quite dull above, and everywhere extremely densely and finely punctured. The antennæ are reddish, about as long as head and thorax, very slightly thickened towards the extremity, the 1st joint as long as the four or five following together; after the 1st, each joint is a little shorter than its predecessor, the 10th joint only about as long as broad; the last joint small and rounded. The head is broader than the thorax, nearly as broad as the elytra, the front part much produced; the eyes placed about the middle of the sides, the grooves for the antennæ very distinct. The thorax is only about half as broad as the elytra; about twice as long as broad, very slightly broader from the base till two-thirds towards the front, then narrowed to the apex; it is obscurely elevated in the middle at the base, and slightly depressed on each side of this elevation; the elytra are about as long as the

thorax. The margins of the 6th and 7th segments of the hind body paler than the rest. The legs elongate, yellowish. The basal joint of the hind tarsi twice as long as the second.

Ega; one specimen, ♀.

### Scopæodes.

Labrum transversum, medio profunde emarginatum.

Caput pedunculo brevi tenui.

Antennæ fractæ.

Tarsi articulo quarto simplice, posteriores articulo primo secundo longiore.

Caput ante oculos elongatum, pedunculo brevi tenui thoracis apici affixum; oculis parvis, rotundatis. Labrum transversum, medio profunde emarginatum. Maxillæ malâ superiore brevi, apice barbatâ. Palpi maxillares articulo primo minuto, secundo tertioque longitudine subæqualibus, illo clavato, hoc apice incrassato, quarto a tertio occulto. Ligula biloba, late emarginata, paraglossæ ei longitudine æquales. Palpi labiales articulo primo secundo breviore, hoc elongato, cylindrico; tertio angusto, præcedente fere duplo breviore. Antennæ fractæ, articulo primo elongato. Thorax angustus, apice attenuatus. Pedes sat elongati, tibiis intermediis leviter spinulosis, ceteris fere inermibus; tarsis omnibus simplicibus, posterioribus articulo primo secundo longiore.

Genus intermedium inter *Scopæum* et *Cryptobium*; ab illo antennis fractis, et ligulâ bilobâ, ab hoc capitis collo angusto, thoracis apice attenuato, distinctum.

I give the above generic name to two new species allied to *Cryptobium* with some reluctance, because that genus contains a variety of forms, several of which, in one or more respects, approach these insects; the very narrow neck by which the head is articulated with the thorax is, however, not met with in *Cryptobium*.

1. *Scopæodes gracilis*, n. sp. Elongatus, testaceus, subtilissime punctulatus; capite vertice fere lævi; thorace basi minus distincte bi-impresso. Long. corp. $2\frac{1}{2}$ lin.

Mas: abdomine segmento 7° ventrali medio exciso.

Antennæ rather shorter than head and thorax, distinctly

thickened towards the extremity; 1st joint rather stout, about as long as the four following together; 3rd joint slightly shorter than 2nd, 4—10 each slightly shorter and thicker than its predecessor, the 10th slightly transverse; last joint about equal to the 10th. Head about as broad as the elytra, the front part much produced, the eyes placed at the middle of the sides; behind these it is narrowed and rounded, so that the hinder angles have entirely disappeared; the front part is quite dull, from a very dense and obsolete punctuation, the hind part almost impunctate and shining. Thorax not quite so long as the head, hardly half as broad as the elytra, quite twice as long as broad, the front third much narrowed, extremely finely, scarcely visibly punctured at the base, with an obscure, broad, double impression. Elytra longer than the thorax, darker in colour at the base than at the apex, closely and finely punctured, but more distinctly so than the rest of the body. Hind body extremely densely and finely punctured. Legs rather long; 1st joint of hind tarsi about twice as long as the 2nd.

Tapajos; a series of specimens.

2. *Scopœodes fusciceps*, n. sp. Gracilis, testaceus, capite elytrisque infuscatis; capite oblongo, opaco, dense subtiliter rugoso-punctato. Long. corp. $1\frac{3}{4}$ lin.

Mas: abdomine segmento 1° ventrali apice anguste profundeque exciso, 6° late longitudinaliter impresso.

Much smaller than *S. gracilis;* the head more strongly punctured, and less rounded behind the eyes. Antennæ distinctly thickened towards the apex; 1st joint as long as the three or four following together, 3rd joint much shorter than 2nd, 4—10 each a little shorter and broader than its predecessor, the penultimate two or three slightly transverse; 11th joint rather less than the 10th. Head broader than the thorax, narrower than the elytra, elongate, the front part much produced, the eyes placed even a little behind the middle, the sides straight behind the eyes, the hind angles a little rounded; it is quite dull, of a smoky colour, the front part paler; it is very finely and densely, but yet distinctly sculptured. Thorax about as long as the head, not much more than half as broad as the elytra, the front third much narrowed; it is scarcely visibly punctured, and has a double impression at the base. The elytra are rather longer than the thorax, smoky

yellow, very finely punctured. The legs are shorter, the hind tarsi much shorter than in *S. gracilis*. The male has a deep, narrow notch in the 7th segment of the hind body beneath, and the 6th segment has along the middle a broad, longitudinal impression, the sides of which are more densely pubescent than the other part of the segment.

Tapajos; one specimen.

### Cryptobium.

This genus is known to be much more richly represented in species in the New World than it is in the other hemisphere; about twenty-two species have been hitherto described from the southern half of America, and I here add twenty species,—eighteen discovered by Mr. Bates and two by Dr. Trail. These twenty species show a remarkable diversity in form. The broad, flat, and ferocious-looking *Cryptobium gigas* offers, indeed, a most striking contrast in its appearance to the completely cylindric *Cryptobium cylindricum*. One of the most interesting peculiarities of the genus is, that in the males of some of the species the ventral plate of the fourth segment of the hind body is furnished with projections or appendages of size and form differing according to the species. I have ascertained that in one of the species here described (*Cryptobium alternans*) this lobe varies in its development in different males, in a manner similar to that which occurs in the male projections and processes found on the more anterior parts of the body in various *Coleoptera*. It appears probable to me that these developments in *Cryptobium* are of a similar character and origin to those secondary sexual characters considered by Darwin to play an important part as influencing sexual selection; and that they exercise little or no influence on the direction of the movements of the abdominal segments, as the notches and processes so common in *Staphylinidæ* on the more apical segments appear to me undoubtedly to do.

1. *Cryptobium gigas*, n. sp. Latum, nigrum, capite thoraceque opacis, parce obsolete punctatis; elytris subopacis, dense fortiterque punctatis. Long. corp. 7 lin.

Mas: abdomine segmento 7° ventrali medio profunde exciso, excisione ad apicem impressionis majoris locato.

Fem.: abdomine segmento 7° ventrali apice medio leviter emarginato.

A very robust species for the genus. Antennæ black, rusty towards the apex, slender, nearly as long as head and thorax; 1st joint as long as the five following, 3rd joint longer than 2nd, 4—11 each a little shorter than its predecessor, each longer than broad. Head broader than the thorax, nearly as broad as the elytra, suborbiculate, being about as broad as long, and narrowed and rounded behind the eyes, the front part but little produced, elevation at base of the antennæ very marked; it is black and quite dull, obsoletely and sparingly punctured; close to the inner margin of the eye is a peculiar ocellated puncture, and there is another similar one at the side, some distance behind the eye. Thorax not much more than half as broad as the elytra, subcylindric, about as long as the head, one and a half times as long as broad, dull black, like the head, and obsoletely and sparingly punctured, a little in front of the base, with a longitudinal smooth elevation, and on each side of this slightly depressed. Elytra scarcely so long as the thorax, their common width rather greater than their length, densely and rather coarsely punctured; the punctuation rugose. Hind body broad, slightly contracted at the base, black, with the extreme apex rusty, moderately closely and finely punctured; the side margins much elevated. Legs black, tibiæ and tarsi a little paler; lower part of front tibiæ clothed with a fulvous pubescence, the front femora in the middle with a tubercle beneath.

In the male the 7th segment beneath is furnished in the middle with a longitudinal impression, pointed at the front part and there serrate at the margin; the impressed portion is yellowish, and has at its extremity a rather deep notch, the sides of which are a little sinuate.

In the female the hind margin of the 7th segment beneath is slightly emarginate at the extremity.

Ega; three specimens, 1 ♂, 2 ♀.

*Cryptobium maxillosum*, Guérin, is closely allied to the *C. gigas*, and is even a little larger; it has the upper surface a little more shining, and the 4th and 5th segments of the hind body have, on the upper surface, a longitudinal plica at the base in the middle, of which there is no trace in *C. gigas*.

2. *Cryptobium plagipenne*, n. sp. Latum, nigrum, elytris plagâ laterali, ano, femoribusque ex parte rufescen-

tibus; capite thoraceque opacis, elytris crebre fortiter rugoso-punctatis. Long. corp. 5 lin.

Mas latet.

Femina: abdomine segmento 7° ventrali apice obsolete emarginato.

Closely allied in structure to the *C. gigas*. Antennæ pitchy at the base, then nearly black, obscure reddish at the extremity; 1st joint as long as the five following. Mandibles pitchy. Head subcircular, much rounded behind the eyes, quite as broad as long, as broad as the elytra, dull black, very sparingly and rather coarsely but not deeply punctured, with a large ocellated puncture close to the inner margin of the eye, and a similar puncture at some distance behind the eye. Thorax much narrower than the elytra, quite one and a half times as long as broad, opaque black, sparingly and indistinctly punctured, a little in front of the base a slightly elevated raised smooth line. Elytra not quite so long as the thorax, their common width rather greater than their length, a little shining, black, near the outer margin broadly ferruginous, coarsely and closely rugose-punctate. Hind body broad, rather narrowed at the base, the lateral margins much developed; it is black, with the 7th segment reddish, and is rather finely and sparingly punctured. The legs are pitchy black, the femora paler at the base, the front femora nearly entirely yellow, and with a tubercle beneath; the front tibiæ towards the apex with a fulvous pubescence.

Ega; one specimen.

3. *Cryptobium opacum*, n. sp. Nigrum, peropacum, antennis pedibusque rufo-testaceis; capite elytrisque omnium dense subtilissimeque rugoso-punctatis; prothorace dense punctato, lineâ mediâ impunctatâ. Long. corp. $4\frac{1}{2}$ lin.

Mas: abdomine segmento 7° ventrali apice minus profunde et late exciso.

Antennæ nearly as long as head and thorax, yellowish; 3rd joint considerably longer than 2nd, 9th joint much longer than 10th. Palpi yellowish. Head broad, rather broader than the thorax, very nearly as broad as the elytra; the front part much produced, so that the eyes are placed a little behind the middle; it is extremely dull, being very densely and indistinctly punctured. The thorax is about

three-fourths the width of the elytra, longer than broad, nearly straight at the sides, closely punctured, the back part more coarsely than the front part, with a line down the middle impunctate. Elytra one-third longer than the thorax, quite dull, densely and finely punctured. Hind body opaque, finely and obscurely punctured, the margins of the segments rufescent; the setæ numerous and distinct. Legs reddish-yellow.

The male is only distinguished from the female by a very small notch at the extremity of the 7th segment beneath.

Tapajos; numerous specimens, ♂ and ♀. Besides these, I have also an imperfect female from Ega, agreeing very closely with *C. opacum*, except that the head is rather longer and narrower (as in the *C. opacifrons*), and the legs longer. It is only by the examination of a male individual that I could decide whether it belongs to a distinct species or not.

4. *Cryptobium opacifrons*, n. sp. Nigro-fuscum, opacum, antennis pedibusque rufo-testaceis; capite omnium dense subtilissimeque rugoso-punctato; prothorace dense punctato, lineâ mediâ impunctatâ; elytris dense minus subtiliter rugoso-punctatis. Long. corp. 4½ lin.

Mas: abdomine segmento 7° ventrali medio longitudinaliter impresso, apice late minus profunde exciso.

At first sight exactly similar to the *C. opacum*, but differing therefrom by its more coarsely punctured elytra, by the different male characters, and also by its head being a little longer and narrower. Antennæ nearly as long as head and thorax, yellowish; 3rd joint one and a half times as long as second, 4—9 differing little from one another; 10th and 11th joints markedly shorter. Palpi yellowish. Head elongate, quite as broad as the thorax, the front part much produced, the eyes placed about the middle; it is extremely dull, being very finely and densely rugose-punctate. The thorax is about three-fourths of the width of the elytra; it is longer than broad, nearly straight at the sides, with a line along the middle smooth and shining, on each side of this coarsely and closely punctured; the punctuation at the sides towards the front part much finer than the rest. The elytra are longer than the thorax, dull, but densely and not altogether finely rugose-punctate. The hind body is finely

and indistinctly punctured; the setæ distinct; the margins of the segments very slightly reddish. The legs are dark yellow.

The male has a very broad, but not deep, notch at the extremity of the 7th segment beneath, in front of which the segment is distinctly channelled, and is, moreover, furnished at the sides with dense black pubescence.

Ega; one specimen, ♂.

5. *Cryptobium longiceps*, n. sp. Elongatum, angustum, subdepressum, piceum, capite opaco, dense obsolete punctato; thorace nitido, crebre minus profunde punctato, lineâ mediâ lævi; elytris dense obsoleteque punctatis, opacis. Long. corp. 3½ lin.

Mas: abdomine segmento 7° ventrali apice minus profunde exciso, 6° apice emarginato.

Allied to *C. fracticorne*, but very differently punctured, and with the front of the head much more produced. The antennæ are long and slender, yellow; 2nd joint about equal to the 3rd, very little difference from joints 2—8, the three last each a little shorter than the preceding one. Head elongate, about as broad as the thorax, narrowed to the front, the front part so much produced that the eyes are placed behind the middle. It is quite dull, densely and indistinctly punctured. Thorax narrower than the elytra, longer than broad, nearly straight at the sides, rather closely but very shallowly punctured; a line down the middle impunctate. Elytra slightly longer than the thorax, densely and indistinctly punctured, opaque. Hind body finely and indistinctly punctured, with numerous distinct outstanding setæ. Legs yellowish.

Ega; one specimen, ♂. I have also another very immature individual from the same locality, which is probably the female of this species; it has a very slight notch in the last segment beneath.

6. *Cryptobium ruficorne*, n. sp. Nigro-fuscum, opacum, abdomine segmentorum marginibus antennisque rufescentibus, pedibus testaceis; capite omnium dense subtilissime rugoso-punctato; prothorace dense minus profunde punctato, lineâ mediâ lævi. Long. corp. 3½ lin.

Mas latet.

Allied to *C. longiceps*, but readily distinguished by its more robust build, and its especially broader head and

thorax. The antennæ are yellowish; 2nd joint about equal to 3rd, but little difference in joints 2—8; 9—11 each a little shorter than the preceding. Mandibles and palpi yellowish. Head quite as broad as the thorax; the front part broad, much produced, so that the eyes are placed a little behind the middle; it is quite dull, being very densely and finely rugose-punctate. Thorax narrower than the elytra, longer than broad; very slightly narrowed behind, closely and rather coarsely but not deeply punctured, with a narrow line along the middle, smooth. Elytra longer than the thorax, quite dull, closely and indistinctly punctured. Hind body with the margins of the segments red, finely and indistinctly punctured, the outstanding setæ distinct. Legs reddish-yellow.

Ega; one ♀ individual, in very bad condition.

7. *Cryptobium subfractum*, n. sp. Subdepressum, subnitidum, piceum, antennis elytrisque rufescentibus, pedibus testaceis; capite elytris fere latiore, dense fortiterque punctato. Long. corp. $3\frac{1}{2}$ lin.

Mas latet.

Antennæ reddish, nearly as long as head and thorax; 1st joint slightly longer than 2nd and 3rd together, 3rd nearly twice as long as 2nd, 4—10 each a little shorter than its predecessor. Mandibles and palpi reddish. Head broad and short, scarcely produced in front, subquadrate, the hind angles rounded; it is coarsely and at the back very closely punctured, more sparingly so in the front, and has a small transverse space in the middle impunctate. Thorax narrower than the elytra, longer than broad; a little narrowed behind, very coarsely and moderately closely punctured, a line down the middle smooth. Elytra a little longer than the thorax, reddish, coarsely and closely punctured, rather shining. Hind body dull reddish, rather sparingly punctured. Legs yellowish.

Ega; one specimen, ♀.

8. *Cryptobium longicorne*, n. sp. Subdepressum, nigrum, antennis rufescentibus, pedibus testaceis; capite subopaco, dense punctato, subtiliterque pubescente; thorace elytrisque sat nitidis, dense fortiter punctatis, illo lineâ mediâ lævi. Long. corp. 4 lin.

Mas: abdomine segmento 7° ventrali margine posteriore late obsolete emarginato.

A rather narrow species, with long, slender antennæ; these are rather longer than head and thorax, pitchy red, rather paler at the extremity; 1st joint scarcely so long as the three following together, 3rd not twice as long as 2nd, joints 4—8 differing little from one another, 9—11 each shorter than its predecessor. Mandibles and palpi pitchy red. Head broader than the thorax, nearly as broad as the elytra, long behind the eyes, the part in front of the eyes not long; it is densely and rather coarsely rugose-punctate, only the extreme front being free from punctures, and is clothed with a fine depressed pubescence. Thorax narrower than the elytra, longer than broad, nearly straight at the sides behind, and only a little narrowed in front; it is closely, and rather coarsely punctured, with a line along the middle, smooth. Elytra rather longer than the thorax, densely and rather coarsely punctured, rather shining, the extreme apex very narrowly yellow. Hind body rather long, finely punctured, and pubescent. Legs yellow, the coxæ and knees slightly darker.

The male is only distinguished by the broad but very shallow emargination of the extremity of the ventral plate of the 7th segment.

Tapajos; six individuals.

9. *Cryptobium scutigerum*, n. sp. Antennis, pedibus, elytrorumque apice testaceis, capite opaco, dense obsolete punctato, subtiliterque pubescente; thorace sat nitido, dense fortiterque punctato, lineâ mediâ angustâ lævi; elytris thorace longioribus, dense minus fortiter punctatis. Long. corp. $3\frac{3}{4}$ lin.

Mas: abdomine segmento 3° ventrali apicem versus foveâ parvâ transversâ impressâ, quarto in lobo lato, apice rotundato, dense longeque setigero, producto, basin versus foveâ parvâ impresso.

Antennæ nearly as long as head and thorax, yellow; 3rd joint one and a half times as long as 2nd, 8th joint about as long as 4th, 9—11 each a little shorter than its predecessor. Head longer than broad, about as broad as the thorax, quite dull and opaque, rather closely but indistinctly punctured, finely pubescent. Thorax two-thirds the width of the elytra, nearly one and a half times as long as broad, nearly straight at the sides, only very slightly narrowed in front; it is coarsely and closely punctured,

with a narrow line down the middle, smooth. Elytra longer than the thorax, densely, rather finely punctured. Hind body quite dull, finely and closely punctured. Legs yellow.

In the male the 3rd segment of the hind body beneath has a transverse fovea in the middle, near the extremity; the 4th segment has a similar but smaller fovea, and is produced into a broad shield, the margin of which is rounded, and densely fringed with long hairs.

Tapajos; two specimens, ♂ and ♀.

*Obs.*—As my individuals of this species are evidently immature, I have not alluded to their general colour.

10. *Cryptobium alternans*, n. sp. Rufescens, capite, elytris, abdominisque apice nigris, pedibus testaceis; thorace nitido, crebre fortiter punctato, lineâ mediâ lævi. Long. corp. 3 lin.

Mas: abdomine segmento 3° ventrali apicem versus puncto setigero instructo, segmento quarto medio producto, cumque puncto setigero, apice longe denseque setoso.

Var. abdomine segmento ultimo rufescente.

This species is remarkable by its alternate colouration. Antennæ as long as head and thorax, the base yellow, the rest dusky reddish; 3rd joint longer than 2nd, 8th quite as long as 4th, 9—11 each a little shorter than its predecessor. Palpi yellow; mandibles red. Head rather broader than the thorax, about as broad as the elytra, dull slaty-black, all the back part densely and distinctly, the front sparingly punctured. Thorax rather narrower than the elytra, straight at the sides, of a rather shining-red colour, coarsely and rather closely punctured, with a line down the middle, smooth. Elytra rather longer than the thorax, dull bluish-black, densely and rather coarsely punctured. Hind body red at the base, the three apical segments blackish; it is dull, and finely punctured. Legs yellow.

In the male the 3rd segment of the hind body has beneath, near the extremity, a setigerous puncture; the next segment has a similar puncture, and is moreover in the middle more or less backwards, and has the hind margin fringed with very long hairs; this lobe is, however, variable in its development, and may be entirely absent, in which case the long hairs fringing the hind margin are also entirely absent; on dissecting an individual in

which the lobe is largely developed, and another in which it is in the intermediate condition, I find no difference in the ædeagus.

Tapajos; several specimens.

11. *Cryptobium punctipenne*, n. sp. Sat angustum, piceum, subopacum, antennis pedibusque testaceis; capite opaco, obsolete punctato; thorace opaco, subcylindrico, dorso utrinque lineâ punctorum irregulari, lateribusque sat crebre punctatis; elytris sat nitidis, crebre fortiterque punctatis. Long. corp. $3\frac{1}{2}$ lin.

Mas: segmento 7° ventrali apice profunde triangulariter exciso.

Allied to *C. fracticorne*, but larger, and not shining. Antennæ long and slender, quite as long as head and thorax, yellow, a little infuscate in the middle; 1st joint long and slender, about as long as the five following together, 3rd a little longer than 2nd, 4—10 each a little shorter than the preceding. Mandibles and palpi yellowish. Head long, much produced in front, so that the eyes are placed at the middle of the sides, of an opaque-pitchy colour, scarcely visibly punctured, the front part impunctate. Thorax about as broad as the head, and two-thirds as broad as the elytra, subcylindric, similar in colour to the head; a broad space down the middle impunctate, on each side of this a rather irregular line of punctures, and besides this with the sides rather sparingly and not deeply punctured. Elytra rather longer than the thorax, closely and rather coarsely punctured, rather shining. Hind body dull, very finely punctured. Legs yellow.

In the male the 7th ventral segment has a deep, narrow notch in the middle of the hind part.

Tapajos; one specimen.

12. *Cryptobium scrobiculatum*, n. sp. Castaneum, subopacum, elytris apice dilutioribus, antennis pedibusque testaceis, illis medio infuscatis; capite obsolete punctato; thorace crebre subtiliter punctato, medio lineâ latâ impunctatâ; elytris prothorace longioribus, dense subtiliterque subrugoso-punctatis. Long. corp. 3 lin.

Mas: abdomine segmento 7° ventrali apice profunde triangulariter exciso, seg. 6° apicem versus medio late minus distincte impresso.

Of a dull reddish or chestnut colour, with the elytra

infuscate; moderately broad. Antennæ long and slender, rather longer than head and thorax, yellowish; joints 3—7 darker than the rest, 1st joint nearly as long as the five following together, 2nd and 3rd joints about equal in length, 4—11 each a little shorter than the preceding. Head rather broad, quite as broad as the thorax, the front part much produced, so that the eyes are placed at the middle of the side; it is of a dull-reddish colour, the back part closely but obsoletely punctured, and finely pubescent, the front part very sparingly but more distinctly punctured. Thorax two-thirds of the width of the elytra, longer than broad, similar in colour to the head; a broad, longitudinal space along the middle smooth, the sides very finely punctured. Elytra longer than the thorax, darker in colour; the apex paler, densely but very finely rugosely punctured. Hind body reddish, quite dull, very finely and closely punctured. Legs yellow.

In the male the 7th segment of the hind body has a deep triangular notch at the posterior part, and the 6th segment has an indistinct broad impression at the extremity.

Amazons; without particular locality; two male individuals.

13. *Cryptobium fuscipenne*, n. sp. Angustum, rufescens, antennis pedibusque testaceis, illis medio, capite (plus minusve), elytris, abdomineque apice infuscatis; capite opaco; thorace elytrisque dense fortiter punctatis, his apice testaceo, illo lineâ mediâ lævi. Long. corp. $2\frac{1}{2}$ lin.

Mas: abdomine segmento 7° ventrali apice medio anguste triangulariter exciso, seg. 6° apice medio late profundeque semicirculariter impresso.

Antennæ long and slender, rather longer than head and thorax, yellow, infuscated in the middle; 1st joint as long as the five or six following together, 3rd joint about equal to 2nd, 4—11 each a little shorter than the preceding one. Mandibles and palpi yellow. Head about as broad as the thorax, eyes prominent, and placed at the middle of the sides; it is quite dull, densely and finely rugose-punctate, the punctuation on the front part more distinct than at the back. Thorax shining reddish, about two-thirds the width of the elytra, longer than broad, coarsely and closely punctured, with an indistinctly raised line along the middle,

smooth. Elytra considerably longer than thorax, fuscous, the extremity paler, densely and distinctly punctured, rather dull. Hind body reddish, with segments 6 and 7 infuscated, except at their hind margins, extremely finely punctured. Legs pale yellow.

In the male the 7th segment of the hind body has a narrow and rather deep notch, and the 6th segment has the hind margin broadly and very distinctly impressed in the middle.

Two specimens, ♂ and ♀. The ♂ (without further locality than Amazons) is described as above. The female is from Pará, and differs a little from the ♂, in being slightly broader, and having the head reddish.

14. *Cryptobium angustum*, n. sp. Elongatum, subcylindricum, nigro-fuscum, elytrorum apice, antennis, pedibusque testaceis; capite opaco, dense subtiliter rugoso-punctato; prothorace opaco, obsoletissime punctulato, basi lineâ elevatâ nitidâ; elytris prothorace vix longioribus, dense fortiterque punctatis. Long. corp. $3\frac{1}{2}$ lin.

Mas: abdomine segmento 4° ventrali in spinam elongatam producto, trochanteribus posticis spinoso-elongatis.

Antennæ scarcely so long as head and thorax, yellowish; joints 3—6 infuscate, first joint as long as the five or six following together, 3rd joint longer than 2nd, 4—10 each a little shorter than its predecessor. Head narrow, but rather broader than the thorax, the front part much produced; the pterygia very broad, the eyes prominent, placed at the middle of the sides; it is of a blackish colour, quite dull, densely and finely rugose-punctate, the extreme front not punctate; the mandibles and palpi yellow. Thorax quite twice as long as broad, only about half as broad as the elytra, dull, with an elevated line in front of the base, shining, scarcely punctured. Elytra slightly longer than the thorax, black, the extremity yellow, closely and rather coarsely punctured, a little shining. Hind body cylindric, closely and rather strongly punctured. Legs pale yellow.

In the male the fourth segment of the hind body beneath is produced into a long, stout tooth or spine, reaching quite to the extremity of the next segment; the hinder trochanters are produced into a long, slender spine.

Ega, Tapajos; three specimens, 1 ♂, 2 ♀.

15. *Cryptobium cylindricum*, n. sp. Elongatum, peran-

gustum, nigro-fuscum, elytrorum apice, antennis pedibusque testaceis; capite opaco, dense subtiliter rugoso-punctato; prothorace opaco, basi lineâ elevatâ nitidâ; elytris crebre fortiterque punctatis. Long. corp. $3\frac{1}{2}$ lin.

Mas: abdomine segmento 4° ventrali in spinam breviorem producto, trochanteribus posticis spinoso-elongatis, femoribusque posterioribus medio obtuse dentatis.

Extremely closely allied to *C. angustum*, but even narrower than that species; the spine on the 4th ventral segment of the male much shorter, the femora on the other hand distinctly angularly dilated on the underside; in other respects nearly the same as *angustum*.

Ega; one specimen, ♂.

16. *Cryptobium laticolle*, n. sp. Nigrum, nitidum, antennis pedibusque rufis; capite crebre fortiterque punctato, thoracis latitudinis; hoc subquadrato, elytris paulo angustiore, crebre punctato, lineâ mediâ lævi; elytris crebre fortiterque substriato-punctatis. Long. corp. 3 lin.

Mas latet.

Very different from the other species here described by the shorter middle joints of the antennæ. These are yellowish and rather short, not reaching half-way back the thorax; 1st joint about as long as the four following together, 3rd joint scarcely longer than second, 4th joint rather longer and narrower than 5th, joints 5—10 each about as broad as long, 11th joint slightly longer than 10th. Palpi yellowish; mandibles pitchy. Head rather short and broad, quite as broad as the thorax, the antennæ inserted not far from the eyes; it is closely and coarsely punctured. Thorax rather longer than broad, nearly as broad as the elytra, straight at the sides, closely and rather coarsely punctured, a line down the middle smooth. Elytra rather longer than the thorax, blackish, a little paler at the base and shoulders, rather closely and coarsely punctured, the punctures distinctly arranged in lines. Hind body rather closely and not altogether finely punctured. Legs yellowish.

Ega; one specimen, ♀.

17. *Cryptobium angustifrons*, n. sp. Rufo-piceum, nitidum, antennis pedibusque rufo-testaceis; capite elytris duplo angustiore, subopaco, subtiliter punctato, vertice elongato; prothorace utrinque serie dorsali punctorum

minorum, lateribus parce punctatis; elytris parce obsolete striato-punctatis. Long. corp. 4—4¼ lin.

Mas: abdomine segmento 7° ventrali apice anguste sat profunde exciso, seg. 6° apice emarginato.

This species has a peculiar facies, arising from its narrow head, with long vertex and its broad thorax. The antennæ are yellow and about as long as head and thorax; 1st joint not much longer than the two following together, 3rd joint one and a half times as long as the 2nd, the following joints slender and elongate, each a little shorter than its predecessor. Palpi yellow. Head longer than broad, quite one-half narrower than the base of the thorax, the eyes placed in front of the middle; it is dull, sparingly and rather finely punctured, and with a fine rather long scanty pubescence. Thorax shining reddish, at the base slightly narrower than the elytra, distinctly narrowed to the front, rather longer than its breadth at the base; on each side the middle with a row of fine punctures, and with other fine punctures at the sides. Elytra rather longer than the thorax, shining, red at the base, the rest infuscate, each with four or five rows of very fine punctures; these, with the exception of the row close to the suture, being very indistinct. Hind body distinctly and not altogether sparingly punctured. Legs yellowish.

In the male the hind margin of the sixth segment beneath is distinctly emarginate in the middle, and the seventh segment has a rather deep and narrow notch.

Tapajos; numerous specimens.

18. *Cryptobium alienum*, n. sp. Nitidum, rufescens, elytris infuscatis; capite crebre fortiter punctato; thorace elytris vix angustiore, his punctato-striatis. Long. corp. 3½ lin.

Mas: abdomine segmento 7° ventrali apice sat profunde triangulariter exciso.

*Obs.*—Facie, antennarumque structurâ, generi *Dolicao* similis.

Antennæ yellow, stout for this genus; 1st joint nearly as long as the three following together, 3rd longer than 2nd, 4—10 each a little shorter than its predecessor, the 10th about as long as broad. Head pitchy red, a little narrower than the thorax, but little produced in front; the eyes placed before the middle, coarsely but not closely punctured, very sparingly pubescent. Thorax but little narrower than the elytra, straight at the sides, but little

longer than broad, of a shining-reddish colour, moderately finely and not closely punctured; a broad space along the middle, smooth. Elytra darker in colour than the thorax, scarcely longer, shining; each with six distinct rows of punctures. Hind body reddish; the intermediate segments infuscate, rather finely but not closely punctured. Legs yellow.

Tapajos; one specimen, ♂.

19. *Cryptobium triste*, n. sp. Angustum, nigro-fuscum, antennis, palpis, pedibusque testaceis, antennis late infuscatis; capite dense punctato, fere opaco; prothorace nitido, crebre sat fortiter punctato, medio lævigato; elytris thorace longioribus, dense punctatis, subnitidis. Long. corp. 2½ lin.

Antennæ moderately long, slender; base of 1st joint yellowish, its apical portion and the following joints infuscate; the apical joints again paler; 3rd joint not so long as 2nd, 10th quite as long as broad. Palpi yellow. Head about as broad as the thorax, constricted in front of the eyes, which are placed about midway at the sides; its surface is densely punctured, the punctures becoming finer and denser towards the vertex, so that the part behind the eyes is quite opaque; it is nearly black in colour, its greatest breadth just in front of the rounded hind angles. Thorax pitchy, shining, much narrower than the elytra, longer than broad, a little rounded and narrowed towards the front; rather coarsely punctured, but with a broad, smooth space along the middle; the punctures bounding this space on each side are closely packed, so as to form an irregular series, which becomes indistinct towards the front. Elytra a little longer than the thorax, densely punctured, the punctures rather deep and moderately coarse, the interstices not dull,—they are nearly black. Hind body very finely punctured, black, and quite dull. Legs yellow; coxæ and under face of the insect obscure reddish in colour.

A single individual, which I believe to be a female, was captured by Dr. Trail on the 5th November, 1874, but he has not sent me the special locality.

20. *Cryptobium Traili*, n. sp. Elongatum, brunneum, antennis pedibusque testaceis, abdomine segmento 6° nigricante; capite angusto, verticem versus attenuato; prothorace subcylindrico, antrorsum leviter angustato; elytris

dense, profunde, fortiter regulariterque punctatis. Long. corp. 5 lin.

Antennæ yellow, slender and elongate; 3rd joint much longer than 2nd, even the 10th slender and elongate, fully twice as long as broad. Palpi yellow, elongate; mandibles yellow. Head elongate and narrow, narrower than the thorax; the eyes convex and prominent, placed far from the vertex and at a considerable distance from the insertion of the antennæ; the antennal elevations very marked, the space between them smooth and shining, and with only three or four punctures; the back part of the head is gradually narrowed from the eyes till the neck; it is opaque, and is coarsely and rugulosely but not densely punctured. Thorax much narrower than the elytra, greatly longer than broad, distinctly narrowed towards the front, and very slightly towards the base; it is shining and of a brownish-yellow colour, coarsely punctured, but with a rather broad, smooth space along the middle. Scutellum coriaceous. Elytra longer than the thorax, of a brownish colour, with the hind margin a little paler; they are densely covered with coarse and deep, rather regularly-arranged punctures, the interstices of which are quite shining. Hind body brownish-yellow, with the 6th segment blackish; it is not shining, is only scantily punctured, and sparingly pubescent. The legs are elongate and yellow.

Rio Madeira; a single female found by Dr. Trail on the 25th May, 1874; it was attracted by light.

*Obs.*—This peculiar species appears to approach the genus *Ophites* in some of its peculiarities; it is the most remarkable *Cryptobium* known to me, and I have very great pleasure in naming it in honour of its discoverer, Dr. Trail, to whom I am indebted for the only individual known of it.

* Sphæronum, n. gen.

Labrum transversum, late emarginatum.

Palpi maxillares articulo tertio incrassato, basi angusto.

Antennæ crassiusculæ, sub-fractæ.

Tarsi articulo quarto simplice.

Corpus elongatum, angustum, alatum. Caput liberum, collo tenui a verticis prolongatione tricarinatâ, obtecto.

* I had written this word *Sphærinum*, and it so stands in the list of species at the commencement of this paper; but as Erichson has used the word *Sphærina* for a genus of Coleoptera, I have thought an alteration necessary.

Labrum breve, medio sinuatum. Mandibulæ robustæ, medio tridentatæ. Maxillæ malâ interiore latâ, barbatâ, exteriore subelongatâ, apice dense longeque barbatâ. Palpi maxillares articulo primo secundo duplo breviore, hoc sat elongato, basi angustiore; tertio secundo longiore, valde incrassato, basi constricto. Labium* paraglossis valde elongatis, acuminatis. Palpi labiales articulo primo secundo fere duplo breviore, hoc elongato, cylindrico; tertio brevi, angustissimo, secundo fere quadruplo breviore et angustiore. Antennæ crassiusculæ, elongatæ, vix fractæ. Thorax angustus, elongatus, basi apiceque attenuatus; prosternum magnum, convexum. Elytra truncata. Abdomen apicem versus leviter incrassatum; penis magnus, latus, oblongo-ovalis. Pedes sat elongati; tibiis anticis basi dilatatis, medio subito constricto; tarsis omnibus simplicibus, articulo primo secundo duplo longiore.

Habitus singularis, capitis forma *Ophitidem* referens, a quo oris partibus, antennis subfractis, tibiarumque anticarum structurâ singulari, discedit.

1. *Sphæronum opacum*, n. sp. Elongatum, opacum, capite, thorace, antennisque nigris, pedibus testaceis, elytris abdomineque obscure rufescentibus; dense subtilissimeque punctulatum, subtilissimeque griseo-pubescens. Long. corp. $5\frac{1}{2}$ lin.

Mas: abdomine segmento 6° ventrali apice medio depresso, semicirculariterque exciso; segmento 7° late impresso, apice emarginato excisoque.

Antennæ nearly as long as head and thorax, black, not in the least thickened towards the extremity; 1st joint more than twice as long as 2nd, 4—10 differing but little from one another; last joint rather longer than the 10th. Head black, about as broad as the elytra, closely and finely punctured and pubescent, produced behind into a stout, tricarinate neck, the hind margin of which is truncate. Thorax considerably narrower than the elytra, twice as long as broad, much narrowed to the base and to the front, its greatest width at about two-thirds of the

* The ligula is distorted in the preparation I have made of the trophi, but as far as I can see it appears to be entirely corneous; if this be the case, it will add another remarkable character to this very distinct genus.

distance from base to front; it is nearly black, very opaque, extremely densely and finely punctured, and very finely pubescent, the hind half with an indistinct carina along the middle. Elytra dull reddish, about as long as the thorax, extremely densely and finely punctured, and extremely delicately pubescent. Hind body obscure reddish, distinctly broader from the base to the extremity, very densely and finely punctured. Legs dull yellowish.

In the male the 6th segment of the hind body beneath is depressed at the extremity, and provided with a rather broad but not deep notch; the 7th segment is broadly flattened or depressed, is emarginate at the extremity, and has in the middle of the emargination a distinct notch, not narrower at the front.

Ega; two specimens, ♂.

2. *Sphæronum depressifrons*, n. sp. Capite thoraceque nigro-piceis, nitidis, fere impunctatis; elytris abdomineque rufescentibus, opacis, dense subtilissimeque punctatis; pedibus testaceis. Long. corp. 5 lin.

Antennæ shorter than head and thorax, pitchy; 1st joint rather shorter than the three following together; joints 2—10 differing but little from one another, the 3rd rather longer than the others; 11th joint longer than the 10th. Head pitchy, as broad as the elytra, with a strong prominence on each side in front over the insertion of the antennæ, and between these prominences depressed and without any carina; it is narrowed behind into a stout, strongly tricarinate neck, and is smooth and shining, towards the sides very sparingly and finely punctured, and very sparingly pubescent. Thorax not much more than half as broad as the elytra, more than twice as long as broad, a little narrowed behind, but more so towards the front; it is shining, it is very sparingly and finely punctured, with a distinct carina along the middle behind. The elytra are distinctly shorter than the thorax, dull reddish, very finely and densely punctured. The hind body is rufescent, a little broader from the base to the extremity, very finely and closely punctured. The legs are yellow.

Ega; a single specimen.

*Obs.*—I suppose this specimen to be a female. The hind body shows no peculiar structure beneath, but on the

upper side the hind part of the 7th segment is distinctly produced in the middle.

3. *Sphæronum carinifrons*, n. sp. Nigro-fuscum, opacum, abdomine rufescente; pedibus testaceis; dense et (fronte exceptâ) subtilissime punctatum. Long. corp. $4\frac{1}{4}$ lin.

Allied to *S. opacum*, but much smaller, the head narrower, and the antennæ shorter. Antennæ nearly as long as head and thorax, dusky red; 1st joint longer than the two following together, 2nd shorter than 3rd, 4—10 scarcely differing from one another. Palpi reddish. Head nearly as broad as the elytra, quite dull, densely and finely punctured, the front part not so densely and finely as the back; it is also densely and finely pubescent; it is produced behind into a short stout tricarinate neck, and in front has besides the prominences over the antennæ,—a distinct elevation between these. The thorax is distinctly narrower than the elytra, about twice as long as broad, narrowed behind, and still more strongly narrowed to the front; its greatest breadth is at fully two-thirds of the distance from base to apex; it is very densely and finely punctured, and has a distinct fine carina in the middle at the base. The elytra are very dark and obscure reddish, very densely and finely punctured, not quite so long as the thorax. The hind body is rather paler than the other parts, obscure dull reddish, very densely and finely punctured, rather incrassated at the extremity. The legs are yellow.

Ega; one specimen.

4. *Sphæronum elongatum*, n. sp. Angustum, nigro-fuscum, opacum, elytris abdomineque rufescentibus, pedibus testaceis; capite subopaco, dense subtiliter punctato. Long. corp. $3\frac{3}{4}$ lin.

Mas: abdomine segmento 6° ventrali longitudinaliter impresso, apice minus profunde exciso; segmento 7° basi late impresso, apice sat profunde exciso.

Closely allied to *S. carinifrons*, but smaller and narrower, and with the head less densely and not rugosely punctured, so that it is not altogether opaque. The antennæ are pitchy black, nearly as long as head and thorax, joints 2—10 differing but little from one another. Head about as broad as the elytra, slightly shining, densely and finely punctured and pubescent; the back

part more finely punctured than the front, the three frontal eminences very distinct, as are also the three carinæ of the neck; the middle one of these narrow, and strongly elevated. Thorax considerably narrower than the elytra, more than twice as long as broad, narrowed in front and behind, and with a distinct central carina visible along quite two-thirds of its length; extremely finely and densely punctured, quite dull. Elytra nearly as long as the thorax, dull red, very densely and finely punctured. Hind body dull reddish, densely and finely punctured, broader towards the extremity. Legs yellowish.

In the male the 6th segment of the hind body beneath is distinctly impressed along the middle, and notched at the extremity; the 7th segment is very broadly impressed at the base, and its hind margin rather deeply notched.

Ega; one specimen, ♀.

5. *Sphæronum carinicolle*, n. sp. Rufescens, capite piceo, crebre minus subtiliter punctato, sub-nitido; prothorace per totam longitudinem carinato, dense subtilissime punctato; pedibus testaceis. Long. corp. $2\frac{2}{3}$ lin.

Mas: abdomine segmentis 6° et 7° apicibus excisis.

Of a dull-reddish colour, with the head and antennæ darker than the other parts. Antennæ not so long as head and thorax, dull red; joints 2—10 differing little from one another, the penultimate quite as long as broad. Head about as broad as the elytra, pitchy, closely and not finely punctured; the extreme base impunctate, the three frontal eminences large, the central carina of the neck elongate, and continued quite to the front as a very narrow impunctate line. Thorax quite twice as long as broad, broader from the base to near the front, then narrowed to the front; it is dull reddish, very densely and finely punctured, with a raised central carina through its whole length, which is, however, but little distinct at the front part. Elytra rather shorter than the thorax, dull red, densely and finely punctured. Hind body red, densely and finely punctured. Legs pale yellow.

In the male the 6th segment of the hind body beneath has a very slight impression along the middle, and a broad shallow notch at the extremity; the 7th segment has a rather deep triangular notch at the extremity.

Ega; one male specimen.

6. *Sphæronum pallidum*, n. sp. Nitidulum, testaceum, capite picescente, lateribus parce sat fortiter punctato. Long. corp. $2\frac{1}{3}$ lin.

Mas: segmento 6° ventrali apice medio emarginato, segmento 7° sat profunde triangulariter exciso.

The small size, very narrow form, very pale colour, and sparing punctuation, render this a very distinct species. The antennæ are reddish, rather shorter than head and thorax. The head is about as broad as the elytra, dark reddish, or pitchy colour, shining, the middle and back part impunctate; the sides sparingly but not finely punctured, the three frontal eminences very distinct. Thorax yellowish, shining, very sparingly and finely punctured, at the back part with a distinct elevation along the middle. Elytra yellow, shining, sparingly and finely punctured, rather shorter than the thorax. Hind body yellow, scarcely shining, but indistinctly punctured. Legs pale yellow.

In the male the 6th segment of the hind body beneath is impressed along the middle, and a little emarginate at the extremity of the impression; the 7th segment is flattened at the base, and has a rather deep triangular notch at the extremity.

Tapajos; ten specimens.

## Lathrobium.

The genus *Lathrobium*, consisting of about one hundred described species, is distributed throughout the world, although comparatively few species are yet known from the tropics and subtropical regions. South America is the part of the world in which hitherto it might have been, with apparent reason, surmised that the genus is represented by fewer species than elsewhere; only two or three species having been described from these parts, and but few others existing, so far as I know, in collections. I am enabled here, however, to distinguish no less than twenty-five Amazonian species of the genus, so that it becomes evident that the want of South American species in collections is not really indicative of anything more than our very limited acquaintance with the tropical *Staphylinidæ*.

Of these twenty-five species the first, *L. macrocephalum*, is about the largest and most peculiar species of *Lathrobium* I am acquainted with, and will probably be ultimately considered a distinct genus. Then follow eight species

bearing an extraordinary resemblance to one another in appearance and general characters, but distinguished nevertheless by striking and highly important primary and secondary sexual characters. In the case of some of these species (*L. puncticeps* and *L. decisum*, for instance), after a very careful examination, I am unable to see any satisfactory distinctive characters except the sexual ones; and an examination of the male intromittent organ has convinced me that it is extremely doubtful whether fertilization could be effected by the sexes of different species, even if attempted. By this I mean that if, for example, the male and female organs in *L. opalescens* be mutually adapted for the facilitation of fecundation, as it is only reasonable to suppose is the case, then from the great difference we find to exist in the intromittent organs of the males of the exactly similar *L. puncticeps*, we are fairly entitled to conclude that fecundation of the female of *L. opalescens* by it would be difficult. It may, perhaps, not be out of place to state here my conviction that these modifications of sexual characters will be found to be very directly in relation with those "laws of variation," a knowledge of which is so much to be desired for the further elucidation of the question of the differentiation of species.

1. *Lathrobium macrocephalum*, n. sp. Robustum, nigrum, nitidum, elytris abdomineque nigro-piceis, pedibus piceis; capite magno, crebre fortiter punctato; prothorace elytrisque parcius punctatis, illo tenuiter canaliculato. Long. corp. $6\frac{1}{4}$ lin.; lat. (capitis) $1\frac{1}{3}$ lin.

Mas: abdomine segmento 7° ventrali apice profunde triangulariter exciso; segmento 6° late triangulariter impresso, apice emarginato.

The massive head of this species distinguishes it from all others of the genus. The antennæ are stout, shorter than head and thorax, slightly more slender at the extremity than the base; 1st joint about as long as the three following together, 3rd longer than 2nd, 4—10 differing little from one another in length; 11th joint slender and pointed, longer than the 10th, rusty at the extremity. The head is rather broader than the thorax; it is a little narrowed towards the front, is coarsely and rather closely punctured; the punctuation rugose behind the eyes, a narrow space along the middle, smooth. Thorax fully

as broad as the elytra, slightly broader than long, a little narrowed behind, rather coarsely and irregularly punctured, a narrow space along the middle smooth, and in the centre of this a fine channel; it is black and shining. Elytra distinctly longer than thorax, shining pitchy black, rather finely and not closely punctured. Hind body pitchy, dull, very finely and not closely punctured. Legs pitchy, the hind ones reddish; first joint of hind tarsi very short, quite hidden by the tibia. In the male the 7th segment of the hind body has on the underside, at its extremity, a rather deep triangular notch. The 6th segment has the hind margin broadly emarginate; in front of this it has a broad triangular impression, the middle part of which is smooth, and the sides furnished with short, coarse, black hairs.

Ega; one specimen.

2. *Lathrobium opalescens*, n. sp. Piceum, nitidum, antennis pedibusque testaceis; capite, thorace elytrisque subtiliter opalescentibus; capite vertice angulisque posterioribus dense, subtilissime rugoso-punctatis, opacis et pubescentibus, disco lævi, fronte fortiter parcius punctatâ; prothorace crebre punctato, lineâ mediâ impunctatâ; elytris crebre punctatis. Long. corp. 4½ lin.

Mas: segmento 7° ventrali apice medio late, sat profunde semicirculariter exciso, ante excisionem leviter impresso; segmento 6° leviter emarginato.

Allied to *L. brunnipes*, but greatly broader, and less cylindric. Antennæ slender and elongate, rather longer than head and thorax, yellow; the 3rd joint longer than 2nd, the penultimate joints shorter than the intermediate ones. Head nearly as broad as the thorax, the back and the hind angles very densely and finely punctured, quite opaque, the front part with an opalescent reflection; a broad space in the middle smooth, in front of which it is sparingly punctured. Thorax quadrate, about as broad as the elytra, its length equal to its breadth, regularly but not closely punctured, a line along the middle smooth; it is of a pitchy colour, with opalescent reflection. Scutellum impunctate. Elytra rather longer than the thorax, moderately closely, and not altogether finely punctured. The hind body is obscurely rufescent, very finely and closely punctured, the 7th segment sparingly punctured. Legs yellow.

The male has a very broad but not deep notch at the

extremity of the 7th segment, beneath; this notch is of a peculiar shape, being somewhat contracted at its entrance, in front of it the segment is a little impressed; the 6th segment has the hind margin broadly but slightly emarginate.

Ega; three male specimens; also one from Santarem, but I am not sure that this indication of locality is correct.

I have also from Ega two female individuals of a *Lathrobium*, which I had at first described under the name of *L. quadraticolle*, but on re-examination I think it highly probable that they may be females of *L. opalescens*, from which they differ by being much larger and broader, their length being $5\frac{1}{2}$ lin. I have ascertained by dissection of one of them that it is a female; the ventral plate of the 7th segment is not rounded in the middle, but is very slightly emarginate; the dorsal lobe of the 8th segment is very compressed at the extremity, so that it appears to form a sharp longitudinal carina.

3. *Lathrobium decisum*, n. sp. *L. opalescenti* omnino similis, notis sexualibus tantum differt.

Mas: abdomine segmento 7° ventrali apice medio profunde, sat late semicirculariter exciso: segmento 6° late profundeque longitudinaliter impresso, apice medio emarginato, utrinque angulatim producto.

Tapajos; a single male.

I am unable to find any characters except the sexual ones to distinguish this species from *L. opalescens*, but these are very marked and important. The notch of the 7th segment is narrower and deeper, not contracted at the entry. The 6th segment has a broad and deep longitudinal impression along the middle; the sides of this impression are remarkably abruptly defined, and project beyond the hind margin, so as to form an acute angle.

I have also, from the same locality, a female individual, which I believe to be the other sex of this species; it is about the same size as the male; it has the hind margin of the 7th segment beneath slightly emarginate in the middle; it differs from the female described as that of *L. opalescens* by its much smaller size, and by the shorter and much less laterally compressed dorsal lobe of the 8th segment.

4. *Lathrobium puncticeps*, n. sp. Picco-rufum, nitidum, antennis pedibusque rufo-testaceis; capite subopaco,

dense punctato, medio parce fortius punctato; prothorace crebre fortiter punctato, lineâ mediâ lævi. Long. corp. 4½ lin.

Mas: abdomine segmento 7° ventrali apice profunde exciso; sexto medio longitudinaliter impresso, 5° obsolete impresso.

Rather broader and more parallel than *L. geminum*. Closely allied to *L. opalescens*, but slightly narrower, and the male characters different. The antennæ are reddish-yellow, long and slender, rather longer than head and thorax; the 3rd joint longer than the 2nd; the penultimate joints shorter than the intermediate ones. The head is as broad as the thorax, pitchy, dull, the sides and back part very densely and finely punctured, the middle and front part sparingly and more coarsely punctured. The thorax is quadrate, about as broad as the elytra, straight at the sides, quite as long as broad, the whole of the sides rather coarsely and closely punctured, a line along the middle smooth; it is of a reddish colour and rather shining. The elytra are rather longer than the thorax, reddish, moderately closely punctured. The hind body is reddish, closely and finely punctured. The legs are yellow.

Tapajos; numerous specimens.

This species is so closely allied to the two preceding that it is scarcely distinguishable from them except by the sexual characters. The male has a rather deep and narrow notch, not contracted at the entrance, on the hind margin of the 7th segment; the 6th segment has a distinct but ill-defined longitudinal impression along the middle, and there are indications of a very slight depression on the 5th segment, the sides of this having, in fresh specimens, some rough black pile, which appears very easily removed. The female has the hind margin of the 7th ventral segment rounded and entire, and the dorsal lobe of the 8th short, and only very slightly laterally compressed towards the apex.

5. *Lathrobium parallelum*, n. sp. Piceum, nitidum, antennis pedibusque rufo-testaceis; capite dense subtiliter punctato, disco lævi, fronte parce fortiter punctatâ; prothorace crebre sat fortiter punctato, lineâ mediâ impunctatâ. Long. corp. 4 lin.

Mas: abdomine segmento 7° ventrali apice profunde exciso, segmento 6° late profundeque longitudinaliter impresso, ad impressionis apicem exciso.

Rather smaller than *L. puncticeps*, and closely allied; the head shorter and rather differently punctured, the structure of the 6th segment of the hind body in the male different. About as large as *L. brunnipes*, but more parallel and rather broader. Antennæ longer than head and thorax, reddish-yellow; 3rd joint longer than 2nd, 4—10 each a little shorter than the preceding one. Head almost as broad as the thorax, the hind angles densely punctured; a small space in the middle impunctate and shining, the punctures in front of and those surrounding this space coarse and not so close. Thorax about as broad as the elytra, quite as long as broad, quadrate, of a pitchy colour, shining, rather coarsely and closely punctured, with a line along the middle smooth. The elytra are longer than the thorax, rather closely and distinctly punctured. The hind body is pitchy, with the extremity reddish, finely and rather closely punctured. The legs are yellow.

The male has a large deep notch at the extremity of the 7th ventral segment; the 8th segment has a broad and deep longitudinal impression along the middle, at the extremity it is deeply emarginate; the sides of the longitudinal impression are not abruptly defined (as they are in *L. decisum*), nor produced beyond the hind margin, and their extremity forms a rounded right angle. In the female the dorsal lobe of the 8th segment is quite simple, not at all laterally compressed; both the dorsal and ventral plates of the 7th segment are a little produced and rounded at the extremity.

Tapajos; several specimens.

6. *Lathrobium mendax*, n. sp. Piceum, nitidulum, antennis pedibusque rufo-testaceis; capite dense punctato, disco lævi, fronte parce fortiter punctatâ; prothorace crebre punctato, lineâ mediâ impunctatâ. Long. corp. vix 4 lin.

Mas: abdomine segmento 7° ventrali apice profunde exciso; 6° medio indistincte longitudinaliter impresso; 5° medio depresso, basi utrinque impressione transversâ profundâ.

This species resembles exactly the *L. parallelum*; it is scarcely smaller, and has the antennæ, thorax and elytra slightly shorter; but the male characters are remarkable, and very different. In this sex the 7th ventral segment has a notch similar to that of *L. parallelum*, but it is not

quite so deep, and rather broader at its opening; the 6th segment is only indistinctly impressed along the middle, but the 5th has a broad and deep impression in the middle, and on each side of this, at the extreme base, is a deep, abruptly-defined, curved, transverse impression.

Tapajos; a single specimen.

7. *Lathrobium certum*, n. sp. Piceum, nitidulum, antennis pedibusque rufo-testaceis; capite dense subtiliter, anterius parce fortiter, punctato, disco lævi; prothorace crebre punctato, lineâ mediâ impunctatâ; elytris crebre fortiter punctatis. Long. corp. vix 4 lin.

Mas: abdomine segmento 7° ventrali apice medio profunde exciso; 6° medio leviter emarginato.

Antennæ reddish, about as long as head and thorax. Head as broad as the thorax; the posterior parts densely rugosely punctured, the anterior part sparingly punctured, the central part free from punctures. Thorax quadrate, just about as long as broad, a broad line along the middle impunctate, the sides rather coarsely punctured. Elytra slightly longer than the thorax, their punctuation quite as coarse as, and similar to, that of the thorax. Hind body dull; densely, extremely finely punctured, reddish towards the extremity. Legs yellowish.

The male has at the hinder part of the 7th ventral segment a deep notch, the entry of it being broad and quite rounded at the sides; the 6th segment is flattened along the middle, and distinctly emarginate at the extremity in the middle: in these characters it approaches considerably *L. puncticeps*, but the sides of the notch of the 7th segment are more cut away, so that it is much broader at its entry than in *L. puncticeps;* the 6th segment is less impressed along the middle, but more deeply emarginate at the extremity.

Amazons; a single male individual; without special locality.

This species, extremely closely allied to the five preceding, has the elytra more coarsely punctured than any of them.

8. *Lathrobium rufulum*, n. sp. Rufo-testaceum, nitidulum, parallelum, abdomine segmentis 2—5 infuscatis, capite angulis posterioribus dense subtiliter punctatis, disco lævi; prothorace lateribus sat crebre punctato, lineâ latâ impunctatâ. Long. corp. 3 lin.

Mas: abdomine segmento 7° ventrali apice sat profunde exciso; segmento 6° medio leviter longitudinaliter impresso, apice late emarginato.

About the size of *L. terminatum*, but of totally different colour, and with the head larger and differently shaped. Antennæ yellow, about as long as head and thorax, formed much as in *L. terminatum*, but slightly stouter, the penultimate joints a little shorter; 3rd joint distinctly longer than 2nd. Head about as broad as the thorax, the hinder angles not rounded, the front part sparingly and rather coarsely punctured; the disc shining and impunctate; the hind angles densely and finely punctured. Thorax subquadrate, straight at the sides, quite as long as broad, a little narrower than the elytra; a broad line along the middle impunctate; the sides moderately coarsely and not closely punctured; the medial punctures at the hind part separated from the others by a narrow, smooth space. Elytra rather longer than the thorax, finely and not closely punctured, the punctures indistinctly arranged in lines. Hind body with the basal segments pitchy, the hind part reddish-yellow, very finely punctured. Legs yellow.

In the male the 6th segment of the hind body beneath has a longitudinal impression along the middle; its hind margin is broadly but very shallowly emarginate, the emargination limited on each side by a slight projection; the 7th segment has a rather broad and deep notch, the front part of which is rounded, and not notched.

Tapajos; one specimen, ♂.

9. *Lathrobium proximum*, n. sp. Rufo-testaceum, nitidulum, parallelum, abdomine piceo, apice rufo-testaceo; capite angulis posterioribus dense subtiliter punctatis, disco lævi; prothorace lateribus crebre punctato, lineâ latâ impunctatâ. Long. corp. 3 lin.

Mas: abdomine segmento 7° ventrali apice sat profunde exciso; segmento 6° late impresso (impressionis apice impunctato), margine posteriore leviter emarginato.

Extremely close to *L. rufulum*, and differing only as follows: the antennæ are rather longer, the 3rd joint considerably longer than the 2nd, the thorax is more closely punctured: and in the male the 6th segment of the hind body beneath has a broader, ill-defined impression, at the extremity of which is a triangular impunctate

(as it were, membranous) space; the hind margin is slightly emarginate, and there is not the least trace of any projection at the outside limits of this emargination; the 7th segment has a notch similar to *L. rufulum*.

Tapajos; about a dozen individuals.

10. *Lathrobium amazonicum*, n. sp. Angustum, piceo-rufum, nitidulum, capite piceo, crebre fortiter punctato; antennis pedibusque testaceis; prothorace crebre fortiter punctato, lineâ mediâ impunctatâ; elytris punctato-striatis. Long. corp. $2\frac{1}{2}$—3 lin.

Mas: abdomine segmento 7° ventrali apice profunde minus late exciso.

A narrow and parallel species. Antennæ yellow, rather longer than head and thorax, moderately stout; 3rd joint longer than 2nd. Head pitchy, rather long, about as broad as the elytra, closely and coarsely punctured; the disc more sparingly punctured, the punctuation at the hind angles rugulose. Thorax slightly narrower than the elytra, straight at the sides, distinctly longer than broad, shining reddish, a line along the middle smooth, the sides coarsely and closely punctured. The elytra are longer and more finely punctured than the thorax, the punctures (rather indistinctly) arranged in lines; they are of a reddish colour, a little infuscated towards the extremity. The hind body is elongate and narrow, finely punctured. The yellow legs are rather short and stout.

The male has a rather deep but narrow notch at the extremity of the 7th ventral segment; the 6th segment has the hind margin slightly projecting in the middle, and in the middle of this is an extremely small emargination or notch.

Tapajos; numerous specimens.

11. *Lathrobium tardum*, n. sp. Rufescens, capite fusco-rufescente, pedibus testaceis; antennis elongatis; capite dense punctato, fere opaco; prothorace crebre punctato, lineâ mediâ lævigatâ; elytris hoc longioribus, sat crebre minus fortiter punctatis. Long. corp. $3\frac{1}{2}$ lin.

Mas: abdomine segmento 7° ventrali apice medio exciso.

Antennæ red, slender, quite 1 line in length; 3rd joint a good deal longer than 2nd. Head slightly broader than the thorax, of an infuscate or somewhat purplish-red colour, coarsely and densely punctured, a small space on the disc, smooth. Thorax a little narrower than the

elytra, longer than broad, nearly straight at the sides and slightly narrowed behind, closely and rather coarsely punctured, with a very straight line along the middle smooth; it is of a red colour and a little shining. Elytra a good deal longer than thorax, reddish with a slight purplish obscuration, a little shining, rather finely and not densely punctured. Hind body elongate and narrow, yellow, very finely punctured, dull except towards the apex, where it is a little shining. Legs yellow.

The male has a moderately large notch at the extremity of the ventral plate of the 7th segment of the hind body.

Manaos; two individuals, ♂ and ♀, captured at light by Dr. Trail in August, 1874.

*Obs.*—This species much resembles *L. amazonicum* in form and colour, but it is larger and has the sculpture of the upper surface denser and finer.

12. *Lathrobium tenuicorne*, n. sp. Elongatum, angustum, parallelum, picco-rufum, antennis pedibusque testaceis; capite picco, dense subtiliter rugoso-punctato, fronte parce fortiter punctatâ, disco anguste impunctato; prothorace crebre sat fortiter punctato, lineâ mediâ impunctatâ. Long. corp. $2\frac{1}{2}$ lin.

Mas: abdomine segmento 7° ventrali profunde exciso; segmento 6° late profundeque impresso.

Allied to *L. amazonicum*, but with the antennæ longer and more slender and the head and elytra differently punctured. The antennæ are yellow, very slender and elongate, considerably longer than head and thorax; 3rd joint much longer than 2nd. Head rather long, its sides parallel, quite as broad as the thorax, the sides and back densely and finely rugosely punctured, the front more sparingly and coarsely punctured, a narrow part in the middle impunctate. Thorax reddish, much longer than broad, moderately closely and rather coarsely punctured, a line down the middle impunctate. The elytra are about as long as the thorax, finely and not closely punctured. The hind body is dusky red, with the 5th and 6th segments obscurely darker. The legs are yellow.

The male has a rather deep notch at the extremity of the underside of the 7th segment of the hind body; the 6th segment has a broad and deep impression; this is very deep and well defined at the front part, and the bottom of it is smooth and membranous.

Tapajos; one ♂ specimen.

13. *Lathrobium Batesi*, n. sp. Parallelum, castaneum, nitidulum, antennis pedibusque testaceis; capite piceo, vertice et angulis posterioribus dense subtiliter, disco et fronte parcius fortiter punctatis; prothorace crebre subtiliter punctato, lineâ mediâ impunctatâ. Long. corp. 2 lin.

Mas: abdomine segmento 7° ventrali apice sat profunde lateque exciso; 6° utrinque impressione profundâ.

Allied to *L. amazonicum*, but much smaller and more finely punctured. Antennæ yellow, longer than head and thorax; 3rd joint considerably longer than 2nd, 4th about as long as 2nd. Head quite as broad as the thorax, pitchy, the hind angles and vertex densely and very finely punctured, opaque, the front and middle more sparingly and distinctly punctured, shining. Thorax longer than broad, nearly as broad as the elytra, shining reddish, the sides rather closely and finely punctured; a broad line down the middle impunctate. Elytra rather longer than the thorax, similar to it in colour, finely and not closely punctured, the punctures arranged in lines at the base. Hind body closely and finely punctured. Legs yellow.

The male characters are peculiar; the 7th ventral segment has a rather deep notch in the middle at the extremity; the 6th segment has on each side the middle, near the base, a large deep fovea or impression; the trochanters are peculiarly formed, their hind margin is concave, its apical angle acuminate, and they are externally obliquely truncate.

Tapajos; eight individuals, four of each sex.

14. *Lathrobium minor*, n. sp. Parallelum, testaceum, nitidulum, capite fortiter parcius, angulis posterioribus dense obsolete punctato; thorace crebre subtiliter punctato, lineâ mediâ impunctatâ. Long. corp. $1\frac{3}{4}$ lin.

Mas: abdomine segmento 7° ventrali apice exciso, segmento 6° emarginato.

Closely allied to *L. Batesi;* paler in colour and rather broader than that species, with the head less densely punctured, and the hind margin of the 6th segment of the hind body emarginate in the male. Antennæ rather longer than head and thorax, yellow; 3rd joint longer than 2nd, 4—10 each a little shorter than the preceding one. Head as broad as the elytra, rather darker than the rest of the insect, the hind angles densely and indistinctly

punctured, the disc almost impunctate, the other part more distinctly and sparingly punctured. Thorax rather longer than broad, a little narrower than the elytra; it is of a shining-yellowish colour, with a broad line along the middle impunctate, the sides not altogether finely punctured. The elytra are shining yellow, longer than the thorax, sparingly and finely punctured, the punctures arranged in rows except at the extremity. Legs pale yellow.

The male has a moderately large notch in the middle of the hind margin of the 7th ventral segment, and the hind margin of the 6th segment is also slightly emarginate in the middle.

Tapajos; four individuals, two of either sex.

15. *Lathrobium simplex*, n. sp. Angustulum, testaceum, nitidulum, capite disperse punctato; thorace dorso biseriatim punctato, lateribus sat crebre punctatis; elytris thorace paulo longioribus, seriatim, minus distincte, punctatis; abdomine crebre subtiliter punctato. Long. corp. 2 lin.

Mas latet.

Broader, but only a little longer, than *Lathrobium longipenne*. Antennæ yellow, rather longer than head and thorax, rather stout; 3rd joint a little longer than 2nd. Head dark yellow, shining, the front part sparingly punctured, a space across the middle impunctate, the vertex more closely punctured. Thorax a little longer than broad, nearly straight at the sides, very slightly narrowed behind, on each side the middle with a row of fine punctures, which towards the base are placed in a depression; these rows are separated by a broad impunctate central space, and outside them the surface is sparingly punctured. The elytra are slightly longer than the thorax; they are shining yellow, scarcely lighter in colour than the thorax; their punctuation is indistinct, consisting of four or five rows of obsolete punctures. The hind body is broad in comparison with the front parts; it is reddish in colour, finely and moderately closely punctured, and finely pubescent, scarcely shining; the legs are pale yellow.

Tapajos; three female individuals.

16. *Lathrobium chloroticum*, n. sp. Pallide testaceum, nitidulum, capite parcius fortiter punctato, medio impunc-

tato; thorace subtiliter punctulato; elytris fere impunctatis. Long. corp. 1½ lin.

Smaller than *L. longulum*, parallel, shining yellow. Antennæ about as long as head and thorax. Head quite as broad as the elytra, straight at the sides and rather long, the sides sparingly and rather strongly punctured, the middle part impunctate; it is rather darker in colour than the rest of the insect. Thorax rather narrower than the elytra, longer than broad, shining yellow, with a line of very fine punctures along each side of the middle, and some other extremely fine punctures about the sides. Elytra rather longer than the thorax, pale yellow, scarcely visibly punctured. Hind body scarcely punctured.

Ega; one specimen (I believe a ♀).

The shining, almost impunctate, hind body renders this a very easily distinguished species.

17. *Lathrobium necatum*, n. sp. Pallide testaceum, nitidulum, minus elongatum, antennis brevibus, abdomine subtiliter minus crebre punctato. Long. corp. 1⅓ lin.

Mas: abdomine segmento 7° ventrali apice excisione parvâ triangulari.

The smallest species of the genus I have seen. Antennæ short, yellow; 2nd joint scarcely longer than 3rd, the following joints bead-like, little longer than broad. Head shining yellow, sparingly punctured, with the middle part impunctate. Thorax about as long as broad, shining yellow, with two rows of fine punctures along the middle; the sides sparingly punctured. Elytra scarcely longer than the thorax, pale shining yellow, almost impunctate. Hind body very finely, sparingly punctured, the apical segments more sparingly than the basal ones. Legs pale yellow.

The male has a small notch at the extremity of the 7th ventral plate of the hind body; this notch is quite pointed in front.

Tapajos; eight individuals.

This species is smaller than *L. chloroticum*, and is readily distinguished by the much less elongate form of the front parts.

18. *Lathrobium deletum*, n. sp. Rufo-testaceum, elytris

basi infuscatis, anterius nitidulum; capite parcius punctato; thorace oblongo, dorso biseriatim punctato, lateribus antice parce punctatis; elytris thorace paulo longioribus, parcius seriatim minus distincte punctatis; abdomine dense punctato, fere opaco. Long. corp. 1¾ lin.

Mas: abdomine segmento 7° dorsali apice medio excisione parvâ, ante hanc impressione parvâ; 6° medio margine posteriore semicirculariter minus profunde exciso, utrinque angulato.

Allied to *L. rufo-partitum*, Fairm., but smaller, and with the head and hind body pale. Antennæ yellow, about as long as head and thorax; 3rd joint slightly longer than 2nd. Head rather small, reddish-yellow, shining, sprinkled with rather coarse punctures, which are denser on the vertex than elsewhere; the middle part free from punctures. Thorax slightly longer than broad, straight at the sides, not narrowed behind, along the middle with two rows of eight or ten fine punctures, and on each side, near the front, with some other punctures. Elytra a little longer than the thorax, the basal half or more infuscate, but the extreme base a little paler than the middle; along the suture each has a series of fine punctures, and near the side three other series of obsolete punctures. Hind body reddish, densely and finely punctured both on the upper and under sides. Legs pale yellow.

The male has a very small notch at the extremity of the 7th ventral segment, and in front of this a very small impression; the 6th segment has a semicircular notch in the middle of the hind margin, and on each side of this forms a well-marked angle.

Tapajos; one ♂, four ♀ individuals; Ega, a single female.

19. *Lathrobium integrum*, n. sp. Rufo-testaceum, nitidulum, elytris basi obscurioribus; thorace oblongo, dorso biseriatim punctato, lateribus antice parce punctatis; elytris thorace paulo longioribus, seriatim, parce, subtiliter punctatis; abdomine supra dense punctato, apicem versus nitidulo, subtus crebre minus subtiliter punctato, nitidulo. Long. corp. 2 lin.

Mas latet.

This species is extremely closely allied to *L. rufo-partitum*, but has the head and hind body paler, and the antennæ not in the least infuscate in the middle. It is also closely allied to *L. deletum*, but is rather larger, and

has the elytra longer, and the underside of the hind body more coarsely punctured and more shining.

Tapajos; a single female.

20. *Lathrobium pictum*, n. sp. Rufescens, nitidulum, capite, elytrorum parte basali, abdominisque apice summo infuscatis, pedibus testaceis; capite parcius punctato, disco lævi. Long. corp. 2 lin.

Mas latet.

Antennæ nearly as long as head and thorax, yellow, with the middle joints darker; 3rd joint slightly longer than 2nd. Head rather short and broad, reddish, but infuscate, sprinkled with rather coarse punctures, which leave a space across the middle free. Thorax shining red, oblong, longer than broad, a little rounded at the sides, with two rows of about seven punctures along the middle, and also with a few punctures on each side, near the front part. Elytra about as long as, but distinctly broader than the thorax; their apex pale yellow, the base reddish, along the middle of each a dark patch; shining, very obsoletely and sparingly punctured, the punctures consisting of a sutural series and some extremely indistinct serial punctures near the sides. Hind body reddish, a little dilated in the middle, closely and finely but a little roughly punctured, a little shining, the apical segment infuscate. Legs pale yellow. Underside of head sparingly and finely punctured, very shining; underside of hind body rather closely and somewhat coarsely punctured, but shining.

Amazons; a single female, without special locality.

This insect bears an extreme resemblance to *L. integrum*, but has the head shorter in proportion to the width, and the hind tarsi considerably shorter.

21. *Lathrobium hilare*, n. sp. Rufo-testaceum, nitidulum, elytrorum parte basali capiteque nigricantibus; capite disperse fortiter punctato, medio absque punctis; elytrorum apice pedibusque flavis. Long. corp. 2 lin.

Mas: abdomine segmento 7° ventrali apice medio excisione minus profundâ, ante excisionem impressione parvâ; 6° medio semicirculariter minus profunde exciso, utrinque angulato.

Antennæ moderately long, reddish-yellow, the middle joints a little more obscure; 3rd joint a little longer than 2nd. Head red, suffused with black, the neck red; it is

shining, and has a good many rather coarse punctures on the upper surface, which become more sparing in the middle, so that the disc is free; on the under surface it is also rather coarsely punctured. Thorax shining reddish, a little rounded at the sides, and slightly narrowed behind; along the middle with two rows of about eight punctures,—these rows a little approximate behind; also on each side towards the front with a few punctures. Elytra slightly longer than the thorax, the larger basal half blackish, the smaller apical half pale yellow, shining, with a sutural row of punctures and three rows near the side, which are but indistinct, and become quite obsolete before the extremity. Hind body red-yellow, rather closely and finely punctured, but still a little shining, the extremity a little infuscate. Legs pale yellow. Under face of hind body more coarsely punctured than the upper, and distinctly shining.

Amazons; a single specimen, without special locality.

The species is closely allied to *L. deletum*, but has the head and basal portion of elytra darker; the antennæ are darker in the middle, and have the apical joints less elongate; the thorax is less parallel at the sides; the hind body not quite so densely and finely punctured, and so more shining. The male characters are very similar in the two species. From *L. pictum* it may be distinguished by the coarser punctuation of the underside of the head.

22. *Lathrobium nanum*, n. sp. Rufo-testaceum, elytrorum parte basali infuscatâ, nitidulum; capite disperse, crebre æqualiter punctato; thorace dorso biseriatim punctato, lateribus præsertim anterius punctatis; abdomine dense subtiliter punctato. Long. corp. $2\frac{1}{2}$ lin.

Mas latet.

Antennæ about as long as head and thorax, the intermediate joints scarcely darker; 3rd joint a little longer than 2nd. Head rather large, reddish-yellow, shining, distinctly, moderately closely punctured, the punctures finer on the vertex than in front, and almost as close on the disc as elsewhere; its under surface rather coarsely punctured. Thorax distinctly longer than broad, very little rounded at the sides and scarcely narrowed behind; along the middle with two rows of close punctures, twelve to sixteen in each row,—the punctures in these rows a little irregular or double; the sides rather sparingly punctured, the punctures being almost wanting towards the base.

Elytra slightly longer than the thorax, shining, the apical half yellow; in front of this infuscate, but the extreme base reddish; along the suture with a row of punctures, and towards the side with three or four other indistinct rows, which become obsolete before the extremity. Hind body reddish, densely and very finely punctured, dull, the punctuation of its under face similar to that of the upper. Legs pale yellow.

Tapajos; four females.

This species greatly resembles the four preceding ones (*deletum*, *pictum*, *integrum* and *hilare*), but is a little larger, and may be easily enough distinguished by the more even distribution of the punctures on the head.

23. *Lathrobium glabrum*, n. sp. Nigrum, nitidum, fere lævigatum; antennis, pedibus, elytrorumque apice summo pallidis; capite parce punctato, disco late impunctato; thorace dorso subtiliter biseriatim punctato, abdomine minus crebre punctato, nitido. Long. corp. 2 lin.

Mas latet.

Antennæ rather stout, moderately long, very slightly thickened at the extremity, yellow, with the middle joints obscure; 2nd and 3rd joints about equal to one another. Palpi yellow; mandibles red. Head rather large, a little broader than the thorax, black and shining, the front, sides and vertex with a few punctures. Thorax very shining, nearly black, longer than broad, nearly straight at the sides and hardly narrowed behind; along the middle with two rows of five or six slightly impressed punctures, and with a few other fine punctures at the sides. Elytra about as long as, but distinctly broader than the thorax, shining black, with a small portion at the extremity yellow; along the suture with a row of about eight punctures, and towards the side with a few other remote punctures, forming three indistinct series. Hind body black and shining, only with a short and scanty pubescence; the apical segments sparingly punctured; the basal segments at their base more closely punctured. Legs pale yellow; coxæ pitchy; hind tarsi slender.

Ega; a single specimen, which I believe to be a female.

24. *Lathrobium politum*, n. sp. Nigrum, nitidum, fere lævigatum; antennis, pedibus, elytrorumque apice pallidis;

thorace dorso biseriatim obsolete punctato, lateribus leviter rotundatis; elytris basi punctis paucis. Long. corp. $1\frac{2}{3}$ lin.

Mas latet.

Antennæ reddish, rather stout, the middle joints a little obscure, 2nd and 3rd about equal. Palpi and mandibles yellow. Head broad, distinctly broader than the thorax, with a few sparing and fine punctures, which are wanting on the disc. Thorax considerably narrower than the elytra, longer than broad, a good deal rounded at the sides, and a little narrowed behind; on each side the middle with a row of about five indistinct punctures, with a very few indistinct punctures outside these near the front. Elytra a little longer than the thorax, shining black, with the extremity pale yellow; the sutural series of punctures indicated only by one or two at the base, and the lateral series quite as indistinct, or more so. Hind body slender and shining, the segments finely punctured in their basal portion. The under surface pitchy; legs pale yellow, with the coxæ pitchy.

St. Paulo; a single female.

This species is closely allied to *L. glabrum*, but is smaller, has the head shorter, the thorax less parallel at the sides, and the elytra more sparingly and indistinctly punctured.

25. *Lathrobium pumilum*, n. sp. Nitidulum, breviusculum, rufo-testaceum, elytrorum apice nigro, obsolete punctulatum; antennis brevibus. Long. corp. 1 lin.

Antennæ yellow, rather stout, a little thickened towards the extremity; 1st and 2nd joints thick, 2nd shorter than 1st, 3rd much shorter and more slender than 2nd, 4th about as long as broad, 8—10 rather strongly transverse, 11th acuminate. Palpi yellow, 3rd joint of maxillary large. Head as broad as the thorax, shining reddish-yellow, impunctate along the middle, at the sides sparingly and obsoletely punctured. Thorax about as broad as the elytra, about as long as broad, shining yellowish-red, sparingly and scarcely visibly punctured. Elytra about as long as the thorax, shining reddish-yellow at the base, black at the apex, sparingly and very indistinctly punctured. Hind body reddish, with the basal portion of the 6th segment infuscate, scarcely visibly punctured. Legs rather short, yellow; tarsi short, anterior only moderately

dilated; basal joint of hind tarsus rather longer than 2nd, 2—4 short and about similar to one another.

Rio Madeira, 25th May, 1874; a single individual, which I believe to be a female, found by Dr. Trail; it was attracted by light.

## Dolicaon.

This generic name was first applied by Laporte to a large Staphylinid from the Cape of Good Hope, and Erichson afterwards included under it some European insects very different in appearance from the South African species above alluded to. The genus now comprises over twenty species, most of which are from the Mediterranean area, with one or two from India and Australia. The insect I here describe as *Dolicaon distans* is very different in appearance from any of the forms hitherto included in the genus, though in its structure it appears to be rather similar to the *Dolicaon lathrobioides*, from the Cape of Good Hope. As the genus already contains species very different in appearance, some of which will probably be grouped as distinct genera, there is no harm in my adding to their number a distinct South American form, which appears to offer all the recorded characters of the genus. This insect, as I have above remarked, has a peculiar facies, which at first reminds one of the genus *Œdichirus*, and I should not feel at all surprised if it ultimately prove to mimic or resemble some Amazonian species of that group.

1. *Dolicaon distans*, n. sp. Angustulum, nigrum, thorace piceo, elytrorum apice rufo, pedibus testaceis, antennis fusco-testaceis; thorace biseriatim punctato; elytris hoc brevioribus, fortiter seriatim punctatis; abdomine apicem versus dilatato, crebre subtiliter punctato. Long. corp. $2\frac{3}{4}$ lin.

Antennæ moderately long, not thickened towards the extremity, reddish at the base, the other joints infuscate; 3rd joint long, rather longer than 2nd, 4—10 each shorter than its predecessor, 10th longer than broad, 11th much acuminate. Palpi reddish. Head black, broader than the thorax or elytra, shining, rather coarsely but not closely punctured, the punctures becoming less numerous towards its middle. Thorax pitchy or dark reddish, rather longer than broad, a little narrowed behind, all the angles

rounded and indistinct; along each side of the middle with a series of six or seven punctures, and also outside these sparingly and irregularly punctured. Elytra very small, shorter than the thorax, black and shining, with the hind margin broadly yellowish; on each is three series of coarse punctures, and a few punctures external to these; these series are abbreviated, especially the external ones, and the sutural one is placed in a depression. Hind body a good deal dilated towards the extremity, closely and finely punctured, dull, with a fine greyish pubescence. Legs yellow, with the coxæ pitchy reddish; the front tarsi only moderately dilated, hind tarsi rather long, 1st joint twice as long as 3rd, 2nd intermediate in length between the two.

A single female found by Dr. Trail on the 3rd November, 1874, but no locality mentioned.

## Scopæus.

This is another widely distributed genus, and one of which only two or three species have as yet been described from South America. Nevertheless, it is probable that species of it are numerous there, and I here describe seven. Of these seven the three last, viz., *S. distans*, *S. laxus* and *S. lævis*, depart widely in facies from the ordinary species of the genus, and suggest to one greatly, at first sight, our European *Tachyusa ferialis;* the polished surface, elongate and loosely articulated form, and the greatly developed legs, distinguish these species from the ordinary forms of the genus. As, however, they possess the tricuspidate ligula, which is so characteristic a mark of *Scopæus*, as well as all the other characters mentioned in systematic works as distinctive of the genus, I have not thought it advisable to establish a new genus for them. A kindred form has, indeed, been already described by Erichson as a *Scopæus;* at least, I suppose from his description of *S. pulchellus*, from Columbia, that it pertains to the same group as the species in question. I have also some other species allied to these insects from Rio de Janeiro. The *S. chloroticus* is also a very peculiar form, and one which may ultimately give rise to the establishment of a separate genus, which, to judge from facies, would probably be as much allied to *Lathrobium* as to *Scopæus*.

1. *Scopæus tarsalis*, n. sp. Rufescens, sat nitidus, parcius obsolete punctatus, elytris fusco-rufis; prothorace lato, obsolete punctato, medio canaliculâ brevissimâ; abdomine basi angustato, subtilissime punctato; tarsis brevibus, validis. Long. corp. $1\frac{2}{3}$ lin.

♂. Antennæ elongate, longer than head and thorax, reddish-yellow; 1st joint rather stouter than those following, quite as long as 2nd and 3rd together, 3rd joint a little shorter than 2nd, 4—10 each slightly shorter but not broader than its predecessor; 11th joint acutely pointed, a little longer than 10th. Labrum with four almost equidistant teeth in front, a little emarginate between the two middle ones. Mandibles each with three acute teeth in the middle. Head dark reddish, very finely and indistinctly punctured, about as broad as the elytra; the extreme vertex in the middle with a short, deep, fovea-like channel, and on either side slightly emarginate; the front part of the head with two large, ill-defined elevations. Thorax distinctly narrower than the elytra, the greatest width about one-fifth from the front, from thence abruptly narrowed to the neck, and slightly narrowed towards the rounded base; extremely finely and indistinctly punctured, shining, in the middle with a short impression. Elytra a little longer than the thorax, infuscate-red, distinctly impressed at the scutellum, extremely finely and indistinctly, and not densely punctured, a little shining. Hind body reddish-yellow, distinctly dilated towards the extremity, densely, very finely and indistinctly punctured. Legs yellow; tarsi short and stout, the front pair very broad.

In the male, segments 2—5 of the hind body are on the underside distinctly impressed in the middle, the 6th segment is nearly simple, the 7th has a deep narrow notch; and it is probable that the elevations on the front of the head are peculiar to the male sex.

Tapajos; a single individual.

2. *Scopæus ornatus*, n. sp. Dense, subtilissime punctatus, opacus, rufescens; pedibus testaceis; antennis articulis quatuor ultimis albidis; elytris fuscis, apice testaceis; abdomine lato, basi angustato, apicem versus infuscato. Long. corp. $1\frac{2}{3}$ lin.

Antennæ about as long as head and thorax, reddish, with the four apical joints white; 1st joint distinctly

stouter than the others, nearly as long as 2, 3 and 4 together; 3rd scarcely so long as 2nd, 10th quite as long as broad. Labrum with a small notch, in the middle on either side of which is a prominent spine; the inner side of this spine is dilated. Mandibles pale red, elongate, irregularly toothed, the left one with a broad, only little prominent tooth in the middle, and between this and the base with a very minute tooth, and above the middle tooth with a small sharp tooth; the right one with three small approximate teeth in the middle, the upper one of which is very obsolete. Head reddish, broad, rather broader than the elytra, the clypeus in front distinctly impressed on each side; the hind angles much rounded, the surface extremely densely, finely and indistinctly punctured. Thorax rather longer than broad, its greatest breadth in front of the middle, greatly narrowed to the front, and a good deal narrowed towards the base; extremely finely carinate along the middle, the carina being only distinctly visible near the base, in consequence of the surface there being a little flattened or depressed on either side; colour and punctuation similar to the head. Elytra rather longer than the thorax, fuscous with the apex yellow, their punctuation extremely dense and fine. Hind body broad, but a good deal contracted at the base, reddish but infuscate towards the extremity, very densely, finely and indistinctly punctured. Legs yellow; tarsi rather stout but elongate, the hind ones being quite half as long as the tibiæ.

In the male, segments 3—6 of the hind body are on the underside impressed along the middle, the hind margin of the 6th segment is broadly emarginate; the hind margin of the 7th segment is also broadly emarginate, and in the middle there is also a small notch.

Tapajos; two males and one female.

3. *Scopæus pauper*, n. sp. Angustulus, subparallelus, rufescens, subtilissime vix perspicue punctulatus, subopacus; vertice emarginato, medio foveolato; pedibus brevibus, validis. Long. corp. 1 lin.

Of narrow form, and almost unicolorous pale-reddish colour. Antennæ short; 3rd joint small, a good deal smaller than the small 2nd joint, joints 3—6 differing little from one another; 7—10 each very slightly broader than its predecessor, and shorter than broad; 11th joint short. Head rather long and narrow, slightly broader than the

thorax, and about as broad as the elytra, nearly straight at the sides; the vertex distinctly emarginate, and with a small distinct fovea in the middle, the surface extremely finely and densely (but not quite so indistinctly as the head and thorax) punctured; the eyes small. Thorax longer than broad, distinctly narrower than the elytra; its greatest breadth much in front of the middle, much narrowed to the front, but only slightly towards the base; the surface very obsoletely punctured, so as to be a little shining, with faint indications of two foveæ at the base in the middle. Elytra only slightly longer than the thorax, extremely finely and indistinctly punctured, depressed at the scutellum. Hind body very finely and indistinctly punctured, a little dilated towards the extremity. Legs yellow, short and stout; the tarsi short, the anterior ones particularly short and broad.

Tapajos; a single female.

*Obs.*—I have not been able to examine the mandibles and labrum of this obscure little species; so far as general appearance goes, it may be said to be closely allied to the European *S. minimus.*

4. *Scopæus chloroticus,* n. sp. Pallide testaceus, angustulus, subparallelus, subnitidus, minus pubescens; thorace lateribus parallelis, angulis anterioribus rotundatis, crebre subtiliter punctato, lineâ latâ mediâ lævigatâ; elytris thorace paulo longioribus, albidis, vix perspicue punctulatis, nitidulis. Long. corp. $\frac{7}{8}$ lin.

Antennæ yellow, shorter than head and thorax, slightly thickened towards the extremity; 1st joint stouter than 2nd, rather longer than 2nd and 3rd together; 2nd joint short; 3rd joint rather shorter and narrower than 2nd; 4—7 bead-like, differing little from one another, 8—10 transverse; 11th joint short. Head rather long and narrow, the sides about parallel, the vertex nearly straight, the angles much rounded; the surface obsoletely and not densely punctured, and with a broad longitudinal line along the middle smooth. Thorax a good deal longer than broad, the sides parallel, the front angles rounded in a gentle curve continuous with the front; the surface obsoletely and not densely punctured, with a broad space along the middle smooth. Elytra distinctly broader, and a little longer, than the thorax, very pale yellow, their punctuation scarcely visible. Hind body parallel, densely

and indistinctly punctured, more opaque than the front parts. Legs pale yellow, short and stout; the tarsi short, the anterior ones broad. Under surface of head impunctate, with two parallel longitudinal lines along the middle.

Tapajos; a single female.

*Obs.*—This minute species is peculiar, and probably generically distinct from the ordinary *Scopæi;* the form of the front angles of the thorax is dissimilar from what is usual in *Scopæus;* the general appearance is much that of an extremely minute *Lathrobium*, but, as the structure of the tarsi is like that of *Scopæus*, it may be placed in that genus till its characters can be more fully ascertained.

5. *Scopæus distans*, n. sp. Rufo-testaceus, nitidus, fere impunctatus, parcius setosus; antennis apice pallidioribus, elytris disco abdomineque apice obscurioribus; pedibus elongatis, tarsis gracilibus. Long. corp. 2 lin.

Narrow and elongate in form. Antennæ about as long as head and thorax, a little thickened towards the extremity, reddish, with the four or five apical joints pale yellow; 3rd joint elongate, a good deal longer than 2nd; 10th joint a little longer than broad. Head rather long and narrow, about as broad as the elytra, entirely rounded at the vertex; the surface shining reddish-yellow, impunctate, with some upright black setæ, and with a fine and scanty yellow pubescence. Mandibles each with three large sharp teeth in the middle. Thorax elongate and narrow, much narrower than the elytra, very convex, the greatest width in front of the middle, and thence much narrowed towards the front and a good deal towards the base; impunctate, colour and setæ as on the head. Elytra long and narrow, a little longer than the thorax, shining and impunctate, yellow, but largely dark chestnut about the middle. Hind body narrow at the base, a good deal broader towards the extremity, yellowish, with the 6th segment, except its hind margin, infuscate; its punctuation and pubescence very fine and indistinct. Legs yellow, long, and rather stout; the hind tarsi long and slender, more than half the length of the tibiæ.

In the male the ventral plate of the 7th segment of the hind body has a broad notch or emargination at the extremity.

Tapajos; several individuals.

6. *Scopæus laxus*, n. sp. Rufo-testaceus, nitidus, fere

impunctatus, parcius setosus; antennis apice pallidioribus, elytrorum disco abdominisque apice obscurioribus. Long. corp. $1\frac{3}{4}$ lin.

This insect so extremely resembles *S. distans*, that to describe it would be in most points to repeat the description of that species; it is, however, rather less elongate in all its parts, so that the 10th joint of the antennæ is hardly as long as broad, and the hind tarsi are distinctly shorter when compared with those of *S. distans*.

In the male the hind margin of the ventral plate of the 6th segment of the hind body is broadly but not deeply emarginate at the extremity, and the 7th has a small notch, and the ædeagus itself is considerably shorter than in *S. distans*.

Tapajos; six male, two female individuals.

7. *Scopæus lævis*, n. sp. Rufo-testaceus, nitidus, fere impunctatus; elytris abdominisque apice nigricantibus, femoribus quatuor posterioribus apicem versus leviter infuscatis. Long. corp. $1\frac{1}{2}$ lin.

Closely allied to *S. distans* and *laxus*, but considerably smaller. Antennæ rather short, a good deal shorter than head and thorax, a little thickened towards the extremity, reddish, with the apical joints a little paler than the middle ones; 3rd joint shorter than 2nd, 8—10 not so long as broad. Head broader than the thorax and as broad as the elytra, rounded at the sides, but with the vertex a little truncate, the surface shining red, without sculpture. Thorax longer than broad, very convex, a good deal narrower than the elytra, much rounded at the sides, being greatly narrowed towards the front and a good deal towards the base, shining red, impunctate. Elytra scarcely longer than the thorax, shining, blackish, without sculpture. Hind body narrow at the base, a good deal dilated towards the extremity, the basal segments reddish, the apical ones blackish; the surface very finely and indistinctly punctured. Legs yellow, the outer portion of the four posterior femora slightly infuscate; the hind tarsi slender and long, a good deal more than half the length of the tibiæ.

Amazons; a single female, without more special locality.

### Lithocharis.

The species of this widely-distributed genus are nowhere more numerous than in South America; thirteen species have already been described by Erichson from Columbia, so that it is not surprising that I should here describe twenty-two species from the Amazons. Among these twenty-two species there is sufficient variety in structural points to render it probable that some of them will ultimately be referred to new genera. The *L. munda* bears considerable resemblance in general appearance to a *Scopæus*, and it is probable that this resemblance is indicative of a real affinity. The five species (*L. oculata*, *quadrata*, *egena*, *humilis* and *ardua*) with setose antennæ, the two basal joints of which are stout, the others slender, may also perhaps form a distinct genus; indeed, Kraatz has already founded a genus (*Thinocharis*) for some Ceylon species possessing this structure of the antennæ; but, as it is doubtful whether the South American species I am alluding to are really congeneric with the Eastern *Thinocharis*, and as Erichson has already described as members of the genus *Lithocharis* several Columbian species with similarly-formed antennæ, I have preferred associating the new forms here described with the cognate forms from a neighbouring locality.

*L. discedens* and *L. connexa* are distinguished by a peculiarity of structure of the 4th joint of the hind and middle tarsi, and are probably closely related to the Columbian *L. biseriata*, Er.

The most peculiar of the new species I here describe are the four I have placed at the end of the genus, viz., *L. polita*, *germana*, *pagana* and *picta*. These four species I anticipate will be found to be closely allied to *L. macularis* and *L. angularis*, Er., from Venezuela and Columbia. Mr. Solsky, who has in the Hor. Soc. Ent. Ross. (v. p. 142, pl. iv.) described and figured the trophi of *Dacnochilus lætus*, Leconte, has suggested that Erichson's *L. angularis* should be placed in that genus; and in the Munich Catalogue this has been done. On comparing the parts of the mouth of the species here described with Solsky's figures, I find them to be far from agreeing therewith; the labrum in the four species I describe possesses an acute stout tooth on either side of the central notch, while in Solsky's figure the lobes are quite destitute of this; the 3rd joint of the maxillary

palpi is more slender than in Solsky's figures, and the 4th joint, which is concealed within the 3rd, appears to be much more slender and acuminate; the last joint of the labial palpi is more slender, quite cylindrical, and only about half as long as the preceding joint. I am, therefore, unable to consider these species as congeneric with the North American *Dacnochilus lætus*, and prefer to place them for the present in the genus *Lithocharis* rather than establish a new genus for them.

Erichson describes the *L. macularis* and *L. angularis* as possessing a labrum similar in structure to the four species I have here described, and I have therefore great doubts whether the *L. angularis* is correctly referred to *Dacnochilus*. I have another closely allied species of the group from Rio de Janeiro.

1. *Lithocharis latro*, n. sp. Lata, depressa, fusco-ferruginea, antennis rufis, pedibus testaceis, dense subtilissime punctata, opaca; elytris dilutioribus, thorace paulo longioribus; tarsis anterioribus dilatatis. Long. corp. $3\frac{1}{2}$ lin.

Antennæ rather slender, reddish, $1\frac{1}{8}$ lin. in length, not at all thickened towards the extremity; 3rd joint distinctly longer than 2nd, 5—10 each slightly shorter than its predecessor, 10th longer than broad. Palpi red, last joint elongate and slender. Labrum red, with a single, short, obscure tooth in the middle, on either side of which it is a little emarginate. Mandibles red, the left with three, the right with four, distinct teeth. Head large, slightly broader than the thorax, the hind angles slightly produced, so that the vertex is a little emarginate, very densely and finely punctured. Thorax very nearly as long as broad, fully half a line in length, the sides a little narrowed behind, very densely and finely punctured, with a very narrow indistinct line along the middle. Elytra $\frac{5}{8}$ lin. in length, taken together rather broader than long, paler in colour than the head and thorax, densely and finely punctured. Hind body broad, very densely and finely punctured. Legs yellow; front tarsi moderately dilated.

In the male the ventral plate of the 6th segment of the hind body is rounded in the middle and emarginate on each side; the ventral plate of the following segment has a very broad and deep excision in the middle.

Ega; a single specimen.

*Obs.*—This species much resembles the Eastern *L. staphylinoides*, but has very different male characters. *L. hepatica*, Er., from Columbia, appears to be an allied species, and I have another closely allied, but distinct, species from Rio de Janeiro.

2. *Lithocharis simplex*, n. sp. Rufescens, capite, elytrorum apice, abdomineque apicem versus infuscatis, pedibus testaceis, dense subtilissime punctata; prothorace quadrato, lineâ mediâ impunctatâ. Long. corp. 1⅔ lin.

Antennæ moderately long, rather stout; 3rd joint about equal to 2nd, 5—9 each slightly broader and shorter than its predecessor, 10th about as long as broad. Mandibles, palpi and labrum reddish. Head infuscate, large, quite as broad as the thorax, densely and extremely finely punctured. Thorax not quite so long as broad, straight at the sides, densely and very finely punctured; rather lighter than the head in colour, with a smooth impunctate line along the middle. Elytra a good deal longer than the thorax and distinctly broader, reddish at the base, infuscate towards the extremity; densely and finely punctured, but the punctuation more distinct than on the head and thorax. Hind body reddish, with the penultimate segments infuscate, densely and finely punctured. Legs yellow.

I do not know the male of this species, but in the female the anterior tarsi are not in the least dilated.

St. Paulo, three individuals; Ega, one individual.

This species is, in form and sculpture, closely allied to our European *L. ochracea*, but it has the labrum quadridenticulate, it being furnished in the middle with four short, stout, not very distinct teeth; the mandibles are very stout at the base, and beyond the stout basal portion, are armed, the left with one, the right with two teeth.

3. *Lithocharis condita*, n. sp. Picco-testacea, antennis rufis, pedibus testaceis, elytris obscure testaceis, dorso infuscatis, dense subtilissime punctulata, subopaca; prothorace mediâ lineâ obscurâ glabrâ; elytris thorace longioribus; tarsis anterioribus simplicibus. Long. corp. 1½ lin.

Antennæ moderately long, rather stout, reddish; 3rd joint about as long as 2nd; 10th joint distinctly broader than the 4th, about as long as broad. Mandibles red,

short and robust, their teeth small. Head pitchy, densely and very finely punctured, very delicately pubescent, scarcely shining. Thorax about as long as broad, scarcely broader than the head, and distinctly narrower than the elytra; densely and extremely finely punctured, so that an impunctate line along the middle is very indistinct, the colour scarcely paler than that of the head. Elytra a good deal longer than the thorax, obscure testaceous, with the disc a little infuscate, closely and finely punctured. Hind body very densely and finely punctured, quite opaque. Legs yellow; front tarsi not in the least dilated, hind tarsi with the basal joint a good deal longer than the 2nd.

The male characters are very slight; the ventral plate of the 7th segment of the hind body being a little emarginate at the extremity in that sex.

St. Paulo; three individuals.

This species appears to be closely allied to the common and widely distributed *L. ochracea*, but is so much smaller that it cannot be confounded therewith. *L. infuscata*, Er., from Columbia, is probably a very close ally of this species, but according to Erichson's description differs in the colour of the hind body.

4. *Lithocharis diffinis*, n. sp. Rufescens, capite, elytrorum apice abdomineque apicem versus plus minusve infuscatis, pedibus testaceis, dense subtilissime punctata; prothorace quadrato, lineâ mediâ impunctatâ. Long. corp. 2 lin.

Similar in size, form and punctuation to *L. ochracea*, but with the head larger, it being almost broader than the thorax; rather larger than *L. simplex*, and with the labrum furnished in the middle with two obscure distant teeth; in other respects it appears to agree exactly with *L. simplex*.

The 7th segment of the hind body has the hind margin of the ventral plate quite simple in the male, so that I am not aware of any external character by which the sexes can be distinguished.

Ega; two specimens.

5. *Lithocharis comes*, n. sp. Rufescens, capite thoraceque obscurioribus, elytris sordide testaceis, apice dilutioribus, pedibus testaceis, dense obsoleteque punctata;

capite thoraceque opacis, hoc lineâ mediâ impunctatâ. Long. corp. 2 lin.

Antennæ red, rather short and stout; 3rd joint scarcely longer than 2nd, 10th not quite so long as broad. Head large, slightly broader than the thorax, pitchy red; the eyes large and rather prominent, the hind angles slightly swollen, so that the vertex appears a little emarginate in the middle; the surface densely, finely and obsoletely punctured, opaque. Thorax scarcely so long as broad, straight at the sides, the front obliquely truncate on each side; the colour slightly paler than that of the head, the surface densely and very obsoletely punctured, opaque, but with a shining impunctate line along the middle. Elytra a little longer and a little broader than the thorax, of a sordid-testaceous colour, but with the apex quite pale, finely and closely punctured. Hind body pointed at the extremity, densely and finely punctured. Legs yellow.

Ega; a single specimen.

*Obs.*—I do not know the sex of this individual, nor have I been able to examine the labrum and mandibles; it is excessively close to *L. diffinis*, but has the head rather larger and the eyes more prominent, and the vertex more emarginate, and the extremity of the elytra paler; the front tarsi are not in the least dilated. It is similar to *L. ochracea*, but has the head larger and the front of the thorax more oblique on each side.

6. *Lithocharis sobrina*, n. sp. Fusco-rufa, opaca, antennis rufis, pedibus testaceis; capite, thorace, abdomineque subtilissime punctatis; elytris subtiliter sed magis distincte punctatis, fuscis, lateribus margineque apicali testaceis. Long. corp. 2¼ lin.

This species is extremely similar to *L. diffinis* and *L. comes*, but has the elytra differently coloured, their sides being obscurely yellow, while the sutural portion is largely infuscate. This infuscation does not, however, reach to the extremity, which is similar in colour to the lateral margins.

There are no external characters to distinguish the male.

Pará; four individuals, collected by Mr. Smith.

*Obs.*—Like the *L. diffinis* and *L. comes*, this insect appears to be closely allied to *L. ochracea*. It has the antennæ longer than *L. comes*, joints 4—10 being each

distinctly a little longer. Notwithstanding its great resemblance to *L. diffinis*, the ædeagus is different enough in the two to make me feel sure they are quite distinct species, the appendage with which it is furnished being short and hastate in *L. sobrina*, while it is elongate and slender in *L. diffinis*.

7. *Lithocharis crassula*, n. sp. Crassiuscula, castanea, pedibus testaceis; capite thoraceque nitidulis, transversis, crebre fortiter punctatis, hoc lineâ mediâ impunctatâ; elytris thorace longioribus, crebre minus fortiter punctatis, vix nitidis; abdomine dense subtilissime punctato. Long. corp. 2 lin.

Antennæ short, reddish-yellow; 3rd joint about equal to 2nd, 4th shorter than 3rd, 5—9 differing but little from one another; the 9th and 10th, however, slightly stouter than the others, about as long as broad. Labrum with a small notch in the middle, without teeth. Mandibles with the basal part stout, each with three teeth; on the left the two upper ones very small, on the right the upper one small. Head broad and short, about as broad as the thorax, the hind margin distinctly emarginate; the surface rather coarsely and closely punctured, the punctures wanting on a space in the centre. Thorax as broad as the elytra, a good deal broader than long, scarcely narrowed behind, the front a little rounded; the surface coarsely and rather closely punctured, with a smooth line along the middle. Elytra a little longer than the thorax, moderately closely and not coarsely punctured, only a little shining. Hind body a good deal pointed at the extremity, densely and finely punctured, not shining. Legs yellow; front tarsi dilated, hind tarsi slender but not very long; 4th joint simple.

In the male the hind part of the ventral plate of the 7th segment of the hind body has a moderately large notch in the middle.

Tapajos, one male; St. Paulo, one female.

8. *Lithocharis vestita*, n. sp. Rufo-castanea, breviter hirsuta, nitidula, antennis brevibus cum pedibus testaceis; capite crebre minus subtiliter punctato, vertice medio profunde impresso; thorace crebre subtiliter punctato; elytris parcius, dorso obsolete biseriatim punctatis. Long. corp. vix 2 lin.

Antennæ yellow, short, rather stout, distinctly thickened

towards the extremity; 3rd joint about equal to 2nd, 4th and 5th about equal to one another, about as long as broad, 6—10 distinctly transverse, 11th stout, pointed, about as long as the two preceding together. Labrum with two distant obscure teeth in the middle. Mandibles each with three teeth in the middle; on the left mandible the centre one is smaller, on the right mandible longer than the others. Head quadrate, rather convex, the vertex with a deep, short longitudinal impression in the middle; the surface shining, at the sides more densely and coarsely punctured than in the middle; the eyes rather small. Thorax distinctly narrower than the elytra, not quite so long as broad, distinctly narrowed behind, the front a little oblique on each side, the front angles rather prominent; the surface shining, rather finely and indistinctly punctured, with a very obsolete line along the middle. Elytra red, shining, a little longer than the thorax, rather sparingly and indistinctly punctured, impressed on each side the suture at the base, and each with two indistinct abbreviated series of punctures on the disc. Hind body rather darker than the front parts, but with the apex paler, a little contracted at the base, closely and finely punctured. Legs yellow, front tarsi only slightly dilated; underside of head coarsely and closely punctured.

Ega; a single individual, of whose sex I am in doubt, the hind body showing nothing peculiar in structure.

9. *Lithocharis integra*, n. sp. Fusco-ferruginea, antennis pedibusque rufo-testaceis, dense subtiliter punctata, opaca; prothorace quadrato. Long. corp. 2 lin.

Antennæ reddish, rather slender; 3rd joint about equal to 2nd, 4th shorter than third, 5—10 differing little from one another, 10th about as long as broad. Labrum reddish, prominent in the middle, and there with three small teeth. Mandibles and palpi red, the former each with three teeth. Head rather long, a little narrowed towards the front, a little broader than the thorax, and quite as broad as the elytra; nearly truncate behind, with the angles rounded, dull reddish in colour, finely and very densely punctured, the eyes small. Thorax a little narrower than the elytra, almost as long as broad, a little narrowed behind, the front distinctly but not greatly oblique on each side; the surface obscure reddish, finely and very densely punctured, without distinct impressions

or line along the middle. Elytra distinctly longer than the thorax, and rather darker in colour, very densely, finely and indistinctly punctured, quite dull. Hind body rather slender, very densely and finely punctured. Legs yellow; front tarsi rather short, distinctly dilated; 4th joint of hind tarsi small, simple.

The male has a very slight emargination at the extremity of the ventral plate of the 7th segment of the hind body.

Ega; two individuals.

10. *Lithocharis compressa*, n. sp. Depressa, ferruginea; crebre subtiliter punctulata, subopaca. Long. corp. $1\frac{3}{4}$ lin.

Antennæ short, red, scarcely at all thickened towards the extremity; 10th joint slightly transverse. Head large and flat, quite as broad as the elytra, reddish, finely and closely punctured, the vertex distinctly emarginate. Thorax rather narrower than the elytra, rather broader than long, distinctly narrowed behind, reddish; extremely finely punctured, with an extremely fine channel near the base, and a very indistinct impression at the base on each side of the middle. Elytra a good deal longer than the thorax, closely and finely punctured, infuscate-reddish. Hind body reddish, densely and finely punctured.

Ananá; a single female taken by Dr. Trail on the 6th September, 1874.

*Obs.*—This species greatly resembles *L. integra*, and appears structurally closely allied thereto, but it is smaller and more depressed, and has the surface less densely punctured, so that it is less opaque.

11. *Lithocharis discedens*, n. sp. Ferruginea, elytris, antennis, pedibusque rufescentibus, opaca, dense punctata; capite thoraceque dense rugulose punctatis, hoc basi quadripunctato; elytris dense minus distincte, dorso biseriatim punctatis. Long. corp. 2 lin.

Antennæ reddish, fully $\frac{1}{2}$ lin. in length; 2nd, 3rd and 4th joints about equal to one another, 5—10 each a little shorter than its predecessor, 9 and 10 scarcely so long as broad. Labrum slightly emarginate in the middle, without teeth. Mandibles red, each with three teeth; the middle tooth on the left mandible very small, on the right one longer than the others. Head broad and short, very densely and rugosely punctured, the punctures finely ocellated, the interstices very fine. Thorax almost as long as

broad, narrowed behind the front, on each side very oblique, the punctuation similar to that of the head; the extreme base with four small foveæ, the middle with a short and excessively fine channel. Elytra brighter red than the head and thorax, distinctly longer than the thorax, closely punctured, each with three series of punctures; one along the suture, two along the middle, these rows not reaching to the apex. Hind body very densely and finely punctured, quite opaque. Legs reddish. Front tarsi short, moderately dilated.

Ega and Tapajos; two individuals.

*Obs.*—The structure of the 4th joint of the middle and hind tarsi is peculiar in this species; though narrow, this joint is on the upper side deeply bilobed. I do not know the sex of my individuals, but I think them to be males, though they have no external abdominal character to indicate this.

12. *Lithocharis convexa*, n. sp. Ferruginea, elytris rufescentibus, antennis pedibusque rufo-testaceis; capite dense rugulose punctato, opaco; thorace dense haud rugulose punctato, basi quadripunctato, punctis externis obsoletis; elytris crebre, dorso vix distincte biseriatim punctatis. Long. corp. $1\frac{3}{4}$ lin.

Antennæ reddish-yellow; 3rd joint slightly longer than the adjacent ones. Labrum not emarginate in the middle, without distinct teeth. Head very densely punctured. Thorax closely punctured, the punctures much finer than on the head, and towards the front not so dense as at the base, so that the front part is slightly shining, the extreme base with four puncture-like foveæ, the outer ones being very indistinct. Elytra finely and indistinctly, not very closely punctured; a little shining, with traces of a sutural and two dorsal series of punctures. Front tarsi distinctly dilated.

In the male the ventral plate of the 7th segment of the hind body is slightly emarginate in the middle at the extremity.

Amazons; two male individuals, without special locality.

*Obs.*—This species is rather smaller than *L. discedens*, to which it is closely allied; but besides some peculiarities of sculpture, which readily enough distinguish it, it has the labrum rather differently formed.

Besides the two individuals above described, I have also

from Ega a specimen rather smaller and more finely punctured and paler, which I believe to be an immature variety of *L. discedens*.

13. *Lithocharis oculata*, n. sp. Nigro-fusca, opaca, antennis, palpis pedibusque testaceis, elytris dilutioribus, angulo externo testaceo; thorace basin versus fortiter angustato, medio canaliculato; oculis permagnis. Long. corp. $1\frac{1}{2}$ lin.

Antennæ yellow, slender, with the two basal joints stout; 3rd joint shorter and greatly more slender than 2nd, joints 3—10 setose. Labrum red, furnished in the middle with two distinct, approximate, stout teeth. Mandibles red, each with two large, sharp teeth. Head short and broad, broader than the thorax, eyes large and convex, reaching to within a short distance of the vertex, which is nearly truncate, the surface densely and finely punctured. Thorax not so long as broad, the front and front angles rounded, the sides much narrowed towards the base; the surface covered with fine, moderately close asperities, and along the middle with a fine channel, which is deepest in its hinder part. Elytra a good deal longer than the thorax and rather paler in colour, each one with the external angle broadly pale yellow; the surface rather closely and finely punctured, the punctuation becoming obsolete towards the extremity. Hind body very densely and finely punctured. Legs yellow; front tarsi not dilated, hind tarsi with the fourth joint small and simple.

Ega; three individuals, of whose sex I am in doubt.

14. *Lithocharis quadrata*, n. sp. Fusca, opaca, dense punctata, pedibus testaceis, antennis elytrisque ferrugineis; capite quadrato, angulis posterioribus rectis; thorace basin versus leviter angustato, medio canaliculato. Long. corp. $1\frac{3}{4}$ lin.

Antennæ reddish, the two basal joints stout, the others slender; 3rd joint distinctly longer than 4th, 4—10 differing very little from one another. Mandibles red, each with two teeth. Labrum red, with two approximate teeth in the middle. Head large, distinctly broader than the thorax, about straight at the sides, the hind angles not rounded, about right angles, the vertex a little emarginate; the surface finely and very densely punctured, opaque, the eyes reaching about half-way to the hind angles. Thorax not quite so long as broad, dis-

tinctly but not greatly narrowed behind, the front angles obtuse and not much rounded, the colour pitchy, similar to that of the head; the surface densely covered with fine asperities, along the middle with a fine channel, which does not reach the front, but is continued to the front as a very fine, smooth line. Elytra a good deal longer than the thorax, rusty testaceous, their sculpture similar to that of the thorax; along the middle of each two indistinct abbreviated lines. Hind body dusky ferruginous, very densely and finely punctured. Legs yellow; front tarsi a little dilated, hind tarsi with the 4th joint small and quite simple.

Ega; a single individual, in which I perceive no external character to indicate the sex.

15. *Lithocharis egena*, n. sp. Ferruginea, dense punctata, leviter nitidula, antennis pedibusque testaceis; thorace basin versus angustato, medio canaliculato, elytris thorace paulo longioribus. Long. corp. $1\frac{1}{2}$ lin.

Antennæ moderately long, yellow, setose; the two basal joints stout, the rest very slender; 3rd joint distinctly longer than 4th. Head rather large, slightly broader than the thorax, dull fuscous, or obscure red; the hind angles a little rounded, the vertex about straight, the surface densely, finely and indistinctly punctured, only slightly shining. The mandibles have each two teeth in the middle, and the labrum two distinct, contiguous denticles in the middle. The thorax is not so long as broad, the front is rounded, the sides much narrowed behind, obscure red; the surface closely covered with fine asperities, but still a little shining, the basal part with a fine channel along the middle, which, though deep at the extreme base, is very indistinct on the middle, and does not reach the front. Elytra only a little longer than the thorax, obscure reddish, slightly shining, their sculpture similar to that of the thorax, but not quite so close. Hind body very densely and finely punctured. Legs yellow; the front tarsi stout, but not dilated.

Amazons; a single individual, of doubtful sex, without special locality.

The species is smaller than *L. quadrata*, is not so dull, and can be readily distinguished by the simple front tarsi.

16. *Lithocharis humilis*, n. sp. Fusca, dense punc-

tata, antennis pedibusque obscure rufo-testaceis; elytris testaceis, apicem versus infuscatis; prothorace basin versus leviter angustato, medio lineâ glabrâ abbreviatâ, posterius profunde canaliculatâ. Long. corp. $1\frac{3}{4}$ lin.

Antennæ setose, obscure reddish, the two basal joints stout, the rest slender; 3rd joint distinctly longer than 4th. Labrum reddish, with two approximate denticles in the middle. Mandibles red, each with two sharp teeth in the middle. Head large, broader than the thorax, and quite as broad as the elytra; the vertex straight, the hind angles much rounded; the eyes rather large and prominent, reaching quite half-way to the vertex; the colour obscure pitchy red, the surface densely and indistinctly punctured. Thorax narrower than the elytra, about as long as broad, distinctly narrowed behind, the front and front angles much rounded, the colour obscure reddish, rather paler than the head; the surface densely covered with fine asperities, along the middle a fine glabrous line, the hind part of which is occupied by a deep and distinct channel. Elytra a little longer than the thorax, finely and not very densely punctured, yellowish, infuscate towards the extremity; along the middle of each are indications of two abbreviated impressed lines. Hind body very densely and finely punctured. Legs yellowish; front tarsi distinctly dilated, hind tarsi with the 4th joint quite simple.

Ega; a single individual, which exhibits no certain indication of sex, and is probably a female.

17. *Lithocharis ardua*, n. sp. Fusco-ferruginea, antennis pedibusque testaceis, thorace elytrisque leviter nitidulis; thorace brevi, basin versus angustato, medio lineâ abbreviatâ, glabrâ, canaliculatâ. Long. corp. $1\frac{1}{3}$ lin.

Antennæ setose, yellow; 1st and 2nd joints stout, the others slender, 3rd not longer than 4th. Labrum large, with two distinct approximate teeth in the middle, and a little sinuate on each side of these, reddish. Mandibles reddish-yellow, rather slender, each with two rather large, sharp teeth in the middle. Head large, broader than the thorax, and quite as broad as the elytra, quadrate, the hind angles right angles and a little rounded; the vertex almost straight, the colour obscure pitchy, dull; the surface closely and indistinctly, in front obsoletely, punctured.

Thorax a good deal shorter than broad, a little narrower than the elytra, much narrowed towards the base; the front rather rounded, the surface closely covered with distinct asperities and slightly shining; along the middle in front of the base is a short, smooth line, in which is a fine channel; the colour is dusky reddish, a little paler than the head. Elytra a good deal longer than the thorax; their colour obscure fuscous, slightly shining, their punctuation indistinct. Hind body obscure ferruginous, very indistinctly punctured. Legs yellow; front tarsi not dilated, hind tarsi slender, with the 4th joint quite simple.

Amazons; a single individual, without special locality; it is probably a male, as it has the ventral plate of the 7th segment of the hind body a little emarginate in the middle at the extremity.

18. *Lithocharis munda*, n. sp. Castanea, nitidula, antennis breviusculis, apicem versus leviter incrassatis; capitis lateribus posterius profunde strigosis; prothorace sat elongato, crebre minus distincte punctato, lineâ mediâ glabrâ; elytris thorace paulo longioribus, crebre punctatis. Long. corp. 1 lin.

Antennæ reddish, short and rather stout; 2nd and 3rd joints about equal, 6—10 each slightly broader than its predecessor, the 9th and 10th distinctly transverse; 11th joint short, stout, obtusely pointed. Labrum rather small, in the middle with two rather stout, widely-separated teeth, and a little emarginate outside the teeth. Mandibles short, each with two small teeth. Head rather large, almost broader than the elytra, slightly narrowed in front; the vertex a good deal emarginate, the hind angles much rounded; on either side, behind the eyes, coarsely longitudinally strigose; towards the front rather coarsely but indistinctly punctured, the sculpture wanting on the middle. Thorax a little narrower than the elytra, quite as long as broad, a little narrowed to the base; the front angles distinct and not rounded, in front of them abruptly obliquely narrowed to form a rather slender neck; the surface shining, rather coarsely and closely but indistinctly punctured, with a broad line along the middle smooth. Elytra a little longer than the thorax, rather finely and indistinctly and not densely punctured. Hind body a little contracted towards the base, indistinctly punctured, slightly

shining. Legs yellowish; basal joints of front tarsi a little dilated; hind tarsi slender and rather long, 4th joint simple: underside of head coarsely punctured, with only a narrow space along the middle smooth.

Tapajos; six individuals, in which I perceive no indications of external sexual characters.

19. *Lithocharis polita*, n. sp. Rufo-testacea, nitida, parce nigro-setosa, fere impunctata; prothorace subquadrato, basin versus angustato, angulis anterioribus minus rotundatis; elytris thorace paulo longioribus, maculâ longitudinali fuscâ; abdomine parce punctato, segmento sexto utrinque maculato. Long. corp. 3 lin.

Antennæ reddish, scarcely longer than head and thorax, rather slender, very slightly thickened towards the extremity; 3rd joint elongate and slender, one and a half times the length of 2nd; 10th joint a good deal longer than broad; 11th joint obtusely pointed, distinctly longer but not broader than 10th. Labrum with a large notch in the middle, reaching almost to the base, the front margin projecting as a tooth on each side the notch. Mandibles short, the basal portion very stout, and at the extremity with three or four fine teeth or serrations; beyond these abruptly contracted. Maxillary palpi with the 3rd joint truncate at the extremity; the 4th joint hidden. Head broad and short, quite as broad as the thorax; the vertex nearly straight, but with a distinct emargination in the middle, shining reddish-yellow; the surface with a few scattered punctures, each bearing a black seta. Thorax in front nearly as broad as the elytra, not quite so long as broad; the sides not curved, but a good deal narrowed towards the base, the front a little rounded, the angles a little rounded; the surface shining reddish-yellow, impunctate, except for some setigerous punctures at the sides. Elytra a little longer than the thorax, quadrate, reddish; each with a dark mark on the middle towards the extremity, smooth and shining, each with a series of fine distant punctures close to the suture, and with two or three other such series of punctures towards the sides. Hind body broad, strongly margined, sparingly punctured, reddish; the 6th segment on either side with a large dark mark. Legs yellow; hind tarsi slender; the basal joint elongate, 2, 3 and 4 each shorter than its predecessor.

In the male the front tarsi are distinctly dilated; the

7th segment of the hind body has on the underside a broad but not deep notch at the extremity, which is continued forwards as a shallow, longitudinal depression. In the female the front tarsi are only slightly dilated, and the 7th segment is simple. In both sexes the 8th segment terminates in two stout, pointed, horny styles of a pitchy-red colour.

Tapajos; one male, three female specimens. In two of the latter the elytra are without the dark mark.

20. *Lithocharis germana*, n. sp. Rufo-testacea, nitida, parce nigro-setosa; prothorace latitudine fere longiore, angulis anterioribus rotundatis; elytris thoracis longitudine, maculâ fuscâ; abdomine sat crebre punctato, segmento 6° utrinque maculato. Long. corp. 3 lin.

Antennæ with the 2nd joint long, 3rd longer than 2nd. Mandibles rather long, each with two distinct teeth in the middle. Thorax very convex, about as long as broad; the sides a little curved and narrowed behind, the front and front angles much rounded. Elytra about as long as the thorax. Hind body finely and moderately closely punctured.

In the male the front tarsi are distinctly dilated; the ventral plate of the 6th segment of the hind body is a little emarginate in the middle at the extremity; on the 7th segment the hind margin is broadly but not very deeply emarginate, and in front of the emargination has a longitudinal smooth space.

Extremely similar to *L. polita*, except in the points mentioned above.

Tapajos; one male, two female specimens. The male is indicated as having been found in an ant's nest.

21. *Lithocharis pagana*, n. sp. Rufo-testacea, nitida, parce nigro-setosa; prothorace basin versus vix angustato; elytris thoracis longitudine, suturâ maculâque obliquâ nigricantibus; abdomine subtiliter sat crebre punctato, segmento sexto utrinque maculâ magnâ; mento tuberculo erecto, acuminato. Long. corp. 3 lin.

Antennæ reddish, slender, about as long as head and thorax, not thicker at the extremity; 3rd joint a little longer than 2nd; 10th twice as long as broad. Mandibles red, moderately elongate, each in the middle with two short teeth, which are obtuse or emarginate at the extre-

mity. Thorax convex, about as long as broad, only slightly narrowed behind, and but slightly curved at the sides; the front and front angles moderately rounded. Elytra quadrate, about as long as and as broad as the thorax, shining reddish-yellow; the raised suture and an oblique dash on the middle of each blackish, with fine sutural and two or three lateral rows of fine distant setigerous punctures. Hind body finely but not densely punctured; the 6th segment with a large spot on either side blackish.

In the male the front tarsi are distinctly dilated; the ventral plate of the 6th segment of the hind body has an extremely slight emargination in the middle at the extremity; the ventral plate of the 7th segment has a small emargination at the extremity and in front of this a short smooth depression. In the female the front tarsi are scarcely dilated.

Tapajos; two male, three female specimens.

*Obs.*—Though excessively similar in general appearance to *L. polita* and *L. germana*, this species is readily to be distinguished from them by the peculiar tubercle on the mentum.

22. *Lithocharis picta*, n. sp. Rufo-testacea, nitida, parce nigro-setosa, nigro-variegata; abdomine crebre subtiliter punctato; mento tuberculato. Long. corp. 3 lin.

Antennæ reddish-yellow, slender, about as long as head and thorax, not thicker at the extremity; 3rd joint distinctly longer than 2nd; 10th quite twice as long as broad. Mandibles moderately long, each with two short teeth in the middle. Head about as broad as the thorax, shining red, the clypeus in front, and an ill-defined transverse mark on the vertex, infuscate. Thorax about as long as broad, scarcely narrowed behind, shining red, the sides and the middle with irregular large dark marks. Elytra about as long as the thorax, shining red, with a large dull mark extending obliquely from the shoulder to the inner angle, the series of punctures along the suture and towards the sides distinct. Hind body finely and rather closely punctured, reddish, with the anterior outer angle of each segment blackish; the 6th segment entirely blackish except towards the hind margin.

St. Paulo.

*Obs.*—The single individual I have seen of this species

appears to be a female and has the front tarsi scarcely dilated; it comes extremely close to the *L. pagana*, but differs in having the head slightly shorter and the hind body a little more closely punctured as well as in its dark markings. The tuberculate mentum readily distinguishes it from *L. polita* and *L. germana*.

## Stilicus.

The species of this genus found by Mr. Bates are only two in number, and are evidently closely allied to the two species *S. jugalis* and *S. carinatus* described by Erichson from Columbia. I have also three or four other closely allied species from Brazil, so that the genus is probably quite as well represented in South America as in any other part of the world; the species, though widely distributed on the globe, being nowhere numerous.

1. *Stilicus amazonicus*, n. sp. Niger, antennis pedibusque testaceis, capite thoraceque opacis, hoc fortiter carinato; elytris nigro-æneis, apice testaceo, minus fortiter punctatis. Long. corp. $2\frac{1}{2}$ lin.

Antennæ rather long, quite yellow; 3rd joint scarcely longer than 2nd; 10th joint quite as long as broad; 11th joint rather long, nearly as long as the two preceding together. Palpi yellow, slightly infuscate. Labrum large. Head dull blackish, rather elongate, very densely punctured; the punctures on a small space on the middle coarser than elsewhere, so that this spot is a little shining, but none of the punctures are wanting, neither are the interstices there any broader. Thorax just $\frac{1}{2}$ lin. in length, strongly angulated at the sides and abruptly narrowed towards the front, densely punctured and with a shining conspicuous smooth line along the middle. Elytra just as long as the thorax and about as broad as long, a little shining, of an obscure brassy colour, with the extremity pale yellow; rather sparingly and not coarsely though distinctly punctured. Hind body densely and finely punctured, slightly shining. Legs clear yellow.

Ega; a single female specimen.

This species is rather larger than the European *S. orbiculatus;* its antennæ are longer, the terminal joint of the maxillary palpi is more elongate and more linear, the head behind the eyes is longer and less truncate, the

thorax more abruptly angulated at the sides and considerably longer, the hind tarsi more slender and rather longer.

2. *Stilicus punctatus*, n. sp. Niger, antennis pedibusque minus læte testaceis, illis medio palpisque leviter infuscatis; thorace fortiter carinato; elytris nigro-æneis, nitidulis, fortiter profundeque punctatis, apice testaceis. Long. corp. $2\frac{1}{4}$ lin.

Antennæ short, reddish, the middle joints infuscate. Palpi infuscate-reddish. Labrum large. Head broad and short, very densely punctured, dull, a little shining on a small place in the middle, where the punctures are a little coarser. Thorax black, much angulated at the sides and abruptly narrowed in front; densely punctured, with a conspicuous shining line along the middle. Elytra quite as long as the thorax, distinctly brassy, with the extremity yellow; distinctly shining, deeply and rather coarsely punctured, the punctuation absent on the pale extremity. Hind body densely punctured, a little shining. Legs yellow.

Ega; a single female individual.

This species is about the size of *S. orbiculatus*, and the head is very similar in form thereto, but the palpi are darker, with the apical joint more linear and elongate; the thorax is more angular at the sides, and the punctuation of the elytra is greatly more conspicuous. From *S. amazonicus*, the smaller size, differently-shaped head, shorter antennæ, and more coarsely punctured elytra of *S. punctatus*, readily distinguish it.

### Monista (nov. gen. *Pæderinorum*).

Labrum medio emarginatum, utrinque rotundatum.

Mandibulæ breviusculæ, robustæ.

Palpi maxillares articulo quarto inconspicuo.

Prosternum post coxas parte corneâ magnâ, sed acetabulis posterius haud occlusis.

Tarsi articulo tertio parvo, quarto bilobo-membranaceo.

Genus ex affinitate *Sunii*, sed facie potius *Lithocharidis*; ab illo mandibulis, labro, et prosterni structurâ, ab hoc tarsorum articulo quarto, facile distinguendum.

Body shining and sparingly punctured. Antennæ short and stout. Mandibles short and robust, toothed in the middle. Labrum large, rounded on either side so as to be emarginate in the middle. Third joint of

maxillary palpi a little dilated in the middle on the inner side and pointed at the extremity; 4th joint very minute. Head with a slender neck. Thorax subglobose, the horny portion of the prosternum large, so that in the natural position it extends as far back as the front edge of the mesosternum; but the side pieces of the prothorax are not contiguous with this, so that the anterior coxal cavities are quite open behind. Mesosternum large, forming a well-marked neck. Tarsi apparently only four-jointed, the 3rd joint being short, especially on the upper side; its lower surface longer and hairy, and the 4th joint consisting of a membrane, hairy beneath, enwrapping the sides and undersurface of the fifth joint on the hind foot; the basal joint is as long as the rest of the tarsus. Front tarsi undilated in both sexes.

This genus is allied to *Sunius*, but cannot be amalgamated therewith, owing to the different structure of the prosternum. Its facies and form are also different, and approach *Lithocharis* and *Scopæus*. It forms a connecting link between the *Pæderidæ* with closed anterior coxal cavities and those in which these are widely open, and its position in the usually adopted scheme of classification is between *Lithocharis* and *Sunius*. The above characters are drawn from a Rio de Janeiro species, of which I give a diagnosis in the subjoined note.*

1. *Monista certa*, n. sp. Rufo-castanea, nitidula, antennis, palpis, pedibus, elytrorumque apice testaceis; capite thoraceque fortiter punctatis, hoc subgloboso lineâ mediâ impunctatâ; elytris fere impunctatis. Long. corp. 1¼ lin.

Antennæ yellow, about as long as head and thorax; 1st joint nearly as long as the two following together, 2nd almost as stout as 1st; 3rd quite as long as and rather more slender than 2nd; 4—8 each slightly shorter than its predecessor, bead-like, about as long as broad; 10th quadrate, slightly larger than the intermediate joints; 11th rather stouter than 10th, about as long as 9th and 10th together, pointed. Head rather broader than thorax,

* *Monista typica*, n. sp. Castanea, nitidula, pedibus testaceis, antennis basi apiceque testaceis, medio obscurioribus, articulo decimo leviter transverso; capite crebre fortiter punctato; prothorace subgloboso, fortiter sed obsolete punctato; elytris thorace longioribus, obsolete punctatis. Long. corp. 1½ lin.

*Hab.*—Rio Janeiro.

Closely allied to *M. certa*, but rather larger, with the thorax more obsoletely punctured and the antennæ clouded in the middle.

narrower than the elytra; the eyes only moderately large, and placed much nearer the antennæ than the vertex; the surface rather closely and moderately coarsely punctured, with simple impressed punctures, castaneous in colour, shining, and bearing a fine erect pubescence. Thorax much narrower than the elytra, nearly as long as broad, without angles, rounded in front, narrowed towards the base, and gently curved at the sides; its colour and sculpture similar to those of the head, but with an impunctate line along the middle, not reaching however to the front. Elytra longer than the thorax, rather inflated, yellowish in colour, but paler at the extremity and slightly clouded about the middle, shining and almost impunctate. Hind body broad and short, strongly margined, the segments very finely and indistinctly punctured; the 6th infuscate, but pale at the extremity. Legs slender, pale yellow.

In the male the ventral plate of the 6th segment of the hind body is emarginate at the extremity; the apical segments are retracted in my only individual.

Ega; a single male.

2. *Monista longula*, n. sp. Rufo-castanea, nitidula, pedibus elytrorumque apice testaceis, antennis basi apiceque dilutioribus; capite thoraceque crebre fortiter punctatis, hoc latitudine longiore, lineâ mediâ impunctatâ; elytris fere impunctatis. Long. corp. $1\frac{1}{2}$ lin.

Antennæ yellowish at the base and extremity, with the middle joints a good deal darker than the others. Thorax longer than broad; its greatest width in front of the middle, thence much narrowed towards the front, and a good deal towards the base. Hind body with the 6th segment concolorous.

St. Paulo; a single female.

*Obs.*—This species is closely allied to *M. certa*, but is readily distinguished by its more elongate thorax.

3. *Monista divisa*, n. sp. Rufo-testacea, nitidula, capite, thorace, elytrisque piceis, his apice late testaceis; antennis pedibusque testaceis, illis ante apicem infuscatis. Long. corp. $1\frac{1}{2}$ lin.

Antennæ rather shorter than head and thorax; 3rd joint slightly longer than the contiguous ones; joints 7—10 infuscate, the others yellowish; 10th joint transversely

quadrate. Head about as broad as the thorax; the sides rounded behind the eyes, towards the narrow neck, pitchy in colour, shining, rather coarsely and closely punctured. Thorax nearly as long as broad, its greatest breadth in front of the middle, greatly narrowed towards the front, and much towards the base; rather coarsely and moderately closely, but obsoletely punctured, with a broad line along the middle smooth. Elytra a good deal broader and longer than the thorax, shining and impunctate, pitchy, with the extremity broadly yellow. Hind body reddish-yellow, very obsoletely punctured. Legs yellow.

In the male the hind margin of the ventral plate of the 7th segment of the hind body is emarginate, and the following segment bears a very broad and deep excision.

Tapajos; a single individual.

## Echiaster.

Of this remarkable genus only six species have been yet described, viz., three from Northern South America, one from Chili, and two from the United States of North America. I here describe ten (or perhaps only nine) new species, which show a striking variation in form of different parts of the body, and leave no doubt that many other species will be discovered; indeed, I have already two others from Rio Janeiro, very dissimilar to any here described.

A highly important character of the genus appears hitherto to have escaped notice, viz., that the prothorax behind the front coxæ is horny. This character, in conjunction with the others indicated for the genus, gives it an isolated position in the *Pæderidæ*, and renders it probable that it will prove to be one of the most important of the genera of South American *Staphylinidæ;* and also that, notwithstanding the extension of one or two species into Chili and North America, *Echiaster* will be one of the most characteristic genera of the Austro-Columbian *Coleoptera*. Kraatz has described a genus from East India (*Sclerochiton*, Kr. Staph. Faun. von Ostind. pl. ii. f. 8), which appears to possess several points of relationship with *Echiaster*, and to be at present its nearest known ally; it is doubtful, however, to what extent the resemblances between the two genera indicate a real affinity between them. Kraatz indeed in his figure and description gives us no reason to suppose that *Sclerochiton* possesses that peculiar

tubular elongation of the apical abdominal segments which is one of the most striking and easily-perceived characters of *Echiaster*.

1. *Echiaster boops*, n. sp. Testaceus, abdominis apice nigricante; capite orbiculato, antennis breviusculis, clavatis, subtus oculis dilatatis. Long. corp. (abdomine extenso) $1\frac{1}{2}$ lin.

Antennæ about as long as head, yellowish; 1st and 2nd joints short and stout; 3rd joint small, rather shorter and much more slender than 2nd; 4—9 each slightly shorter than its predecessor, the penultimate joints rather strongly transverse; 11th joint rather short. Maxillary palpi with the 3rd joint broad and short. Head broader than the thorax, and even slightly broader than the elytra, the eyes occupying a large portion of the side and encroaching greatly on the under surface; the hind angles rounded, the vertex not gradually narrowed but the neck very abrupt; the surface opaque, very densely and indistinctly, though not very finely punctured. Thorax only about half as broad as the elytra, longer than broad, the greatest width in front of the middle, much narrowed towards the front and a good deal towards the base; the surface even, the colour yellowish, the punctuation similar to that of the head. Elytra distinctly longer than the thorax and rather darker in colour, very densely and more roughly and distinctly punctured than the head, quite opaque. Hind body much pointed towards the extremity, similar in colour to the elytra, with the terminal segments blackish, densely punctured, and with a short subsquamose golden pubescence. Legs pale yellow.

Tapajos; nine individuals, which show me no external sexual distinctions.

2. *Echiaster fumatus*, n. sp. Testaceus, abdominis apice nigricante; capite, elytris metasternoque obscurioribus; capite orbiculato, antennis breviusculis, clavatis. Long. corp. $1\frac{1}{2}$ lin.

This species is excessively closely allied to *E. boops*, but it is slightly more elongate; it has the elytra and metasternum infuscate, and the head also is more obscure in colour, and differs a little from that of *E. boops* in its form, it being rather longer in proportion to its breadth, so that the eyes do not occupy so large a portion of the

sides; the thorax also is indistinctly carinate along the middle. In other respects it extremely resembles *E. boops*.

Tapajos; a single individual of unknown sex.

3. *Echiaster signatus*, n. sp. Elongatus, angustulus, castaneo-testaceus, elytris fusco-nigrosignatis; crebre fortiter punctatus; capite elongato, vertice angusto. Long. corp. $2\frac{1}{3}$ lin.

Antennæ yellow, rather longer than the head, a little thickened towards the extremity; 3rd joint much narrower but almost longer than 2nd; 4th and 5th joints slender, nearly equal to one another, each rather longer than 3rd; 8—10 bead-like, scarcely broader than long; 11th rather broader, and a good deal longer than 10th, ending in a seta-like spine. Mandibles reddish, very elongate and slender, each with two teeth, of which the upper one is very long. Labrum with two sharp, stout, triangular, approximate teeth in the middle, and on each side these with a smaller sharp projection. Head longer than broad, reddish, gradually narrowed from the eyes to the vertex, densely punctured; the punctures rough and asperate, except on the front part. Thorax elongate and narrow, only half as broad as the elytra, twice as long as broad; its greatest width about the middle, thence a good deal narrowed towards the front and slightly towards the base, dull, reddish in colour, densely punctured. Elytra only slightly longer than thorax, yellowish, but with four large longitudinal marks towards the extremity (often more or less confluent), leaving a basal fascia pale, which, however, is subinterrupted in the middle by the extension forwards of the dark markings; densely and roughly punctured. Hind body elongate, slender and greatly pointed, obscure yellowish; the basal segments rather coarsely and asperately punctured, the apical ones very finely and indistinctly. Legs pale yellow; under surface chestnut-yellow, coarsely punctured.

Tapajos; eleven individuals.

On dissecting one of these specimens I find it to be a male, though there are no external characters to indicate this, and the ædeagus is small and inconspicuous. The black marks on the elytra vary a good deal in their extent.

4. *Echiaster carinatus*, n. sp. Elongatus, angustulus, testaceus, elytris fuscis, basi testaceis; dense punctatus,

opacus; capite elongato, vertice angusto; thorace medio longitudinaliter carinato. Long. corp. $2\frac{1}{2}$ lin.

Antennæ yellow, about as long as head; 1st joint much stouter and longer than the following ones, as long as the three following joints together; the two or three penultimate joints distinctly transverse. Mandibles very long and slender, the upper of the two teeth in the middle very long. Labrum with two widely-separate sharp teeth in the middle, and sinuate and emarginate between them; lateral teeth indistinct. Head reddish, gradually narrowed from the eyes to the vertex; convex in the middle, so as to give an appearance of two obscure anteriorly divergent grooves; the surface dull, densely and intricately punctured, with the interstices extremely fine. Thorax elongate and narrow, hardly half so broad as the elytra, quite twice as long as broad; the greatest width in the middle, thence a good deal narrowed towards the front and slightly towards the base, pale reddish-yellow, closely but indistinctly punctured, dull; along the middle with a broad longitudinal elevation, and depressed on either side of this. Elytra about as long as the thorax, blackish, with the basal portion pale yellow, densely and roughly but not coarsely punctured. Hind body elongate and narrow, very pointed, yellowish, with the extremity darker, and on the side of each segment a small, indistinct, dark mark; the basal segments rather coarsely and roughly punctured. Legs pale yellow.

Tapajos; a single female.

This species at first sight resembles *E. signatus* extremely, but is abundantly distinct by the structure of the labrum and the carinate thorax.

5. *Echiaster latifrons*, n. sp. Latior, piceus, antennis, palpis, pedibusque testaceis; capite lateribus rotundatis, vertice angusto; prothorace elongato, bisulcato; elytris abdomineque fortiter asperato-punctatis. Long. corp. $2\frac{3}{4}$ lin.

Antennæ reddish-yellow, rather longer than the head; 1st joint very stout, quite as long as the two following together; 3rd joint more slender than 2nd; 4th and 5th slender, each longer than 2nd, differing little from one another; 6th shorter than 5th, 7th shorter than 6th, about as long as broad; 8—10 slightly transverse, 11th acuminate at the extremity. Mandibles reddish. Labrum with four sharp approximate teeth in the middle. Head broad, quite as broad as the elytra, suborbiculate, with the sides

evenly curved behind the prominent eyes towards the vertex; the colour is pitchy, the surface quite opaque, densely punctured with umbilicate punctures, more indistinct towards the front; the interstices very fine, the vertex in the middle with an obscure, longitudinal impression. Thorax only half as broad as the elytra, nearly twice as long as broad; the greatest breadth about the middle, thence much narrowed towards the front and slightly towards the base; along the middle with two deep, longitudinal furrows; the colour similar to that of the head, as also the punctuation, but the latter not quite so distinct. Elytra quite as long as the thorax, of an obscure fuscous colour, with some very indistinct paler spaces at the base, densely punctured with a distinct scabrous punctuation. Hind body with the basal segments roughly and coarsely punctured, the apical ones nearly smooth. Legs pale yellow.

Tapajos; a single individual, of doubtful sex.

*Obs.*—In the form of the head this species is intermediate between *E. boops* and *E. signatus*; the individual described bears a transverse impression on the middle of the head, which I have not mentioned in my description, as I think it is the result of accident.

6. *Echiaster mamillatus*, n. sp. Infuscato-rufescens, elytrorum fasciâ latâ basali, antennis pedibusque testaceis; opacus, dense punctatus; capite angusto, vertice elongato, subtus pone orem bimamillato; thorace minus elongato, latius bisulcato. Long. corp. 2 lin.

Rather narrow. Antennæ reddish-yellow; 1st joint very stout, rather short; 2nd joint stout, bead-like, not longer than broad; 3rd joint small, 5—10 each a little broader than its predecessor, 7—10 transverse; 11th joint rather stout, oblique at the apex. Mandibles red, very slender, only moderately long. Teeth of labrum short and indistinct. Head infuscate-red, about as broad as the thorax; the sides convergent, the vertex forming a neck; the surface densely and obscurely punctured, convex between the eyes. Thorax longer than broad, much narrower than the elytra, rather irregular in form, with a rather obscure elevation along the middle, and another still more obscure on each side of this; colour and sculpture similar to that of the head. Elytra longer than the thorax, blackish at the apex, the basal part yellow, this colour forming an angulated fascia, which occupies nearly half of the elytra; densely asperately

punctured. Hind body much pointed towards the extremity, the basal segments densely, moderately coarsely, the apical ones very finely punctured. Legs pale yellow. Front tibiæ slightly dilated towards the apex, and distinctly bisinuate externally. On the underside of the head, at the base of the mouth, are two peculiar fine tubercles.

Tapajos; five specimens.

*Obs.*—This species varies much in colour, some individuals being nearly black, and others reddish or yellow.

I have dissected the terminal segments of one of these specimens, with the hope of ascertaining it to be a male; but I am unable to say positively whether this is the case or not; for though I have found what may possibly be the ædeagus, yet it is so small and insignificant that I am by no means sure it may not be merely a portion of some dried internal tissue;—this although I have examined it with a very high power.

7. *Echiaster muticus*, n. sp.? Infuscato-rufescens, elytrorum fasciâ basali, antennis pedibusque testaceis; opacus, dense punctatus; capite angusto, vertice elongato, subtus mutico; thorace minus elongato, latius bisulcato. Long. corp. 2 lin.

Tapajos; two individuals.

*Obs.*—These two specimens present no difference from *E. mamillatus*, except the absence of the tubercles on the underside of the head; it is probable that this may be merely a sexual character, the *E. muticus* being only the other sex of *E. mamillatus*, in which case the species may bear the name *E. mamillatus*.

8. *Echiaster tibialis*, n. sp. Rufus, opacus, dense punctatus, pedibus testaceis; capite elongato, postice angustato; thorace minus elongato, latius bisulcato; tibiis anterioribus extus dilatatis. Long. corp. $1\frac{3}{4}$ lin.

Antennæ red, stout, as long as the head; joints 5—10 each transverse, and each slightly broader than its predecessor; 11th joint short. Mandibles very slender, rather short. Labrum distinctly quadridentate. Head elongate, the sides narrowed, but not rounded from the eyes to the neck; the surface elevated in the middle, densely and obscurely punctured, quite dull, reddish. Thorax much narrower than the elytra, rather longer than broad, the sides almost rounded; the greatest width

about the middle, thence much narrowed to the front, and a little towards the base, with a broad, ill-defined, longitudinal impression along each side of the middle; red, punctuation dense and obscure. Elytra much longer than the thorax, and slightly paler in colour, densely and indistictly punctured. Hind body quite dull, densely punctured, and with a very fine and short, depressed golden pubescence; 6th segment very elongate. Legs pale yellow; anterior tibiæ flattened, so that seen on one face they appear very broad; their tarsi with the basal joint broad, each joint following a little narrower than its predecessor.

Tapajos; three individuals.

*Obs.*—These three individuals all have the hind margin of the ventral plate of the 6th segment of the hind body distinctly emarginate in the middle, and I suppose them all to be males; the 7th segment is entirely retracted, except in one specimen, in which its hind margin is exposed, and this is emarginate beneath, like the 6th segment.

9. *Echiaster Batesi*, n. sp. Testaceus, dense punctatus, opacus, abdominis apice fuscescente; capite sat elongato, lateribus curvatis, vertice angusto; thorace minus elongato, profunde bisulcato. Long. corp. $1\frac{2}{3}$ lin.

Antennæ yellow, short, quite as long as the head; 1st joint rather short, very stout; 2nd almost orbicular; 3, 4, 5 small, subequal to one another; 6—10 each a little broader than its predecessor, 9 and 10 distinctly transverse, 11th moderately long. Mandibles very slender, rather short. Labrum very indistinctly toothed. Head rather long, the sides gradually narrowed in a rounded curve to the narrow vertex, which is not prolonged into a neck, red, densely and very indistinctly punctured, elevated about the middle. Thorax a good deal narrower than the elytra, and almost as broad as the head; rather longer than broad, almost rounded at the sides; the greatest breadth in front of the middle, thence much narrowed towards the front, and distinctly towards the base, deeply longitudinally impressed on each side of the middle, yellow, quite dull, punctuation very indistinct. Elytra rather longer than the thorax, closely and indistinctly punctured. Hind body densely and indistinctly punctured, obscurer in colour towards the extremity.

Legs pale yellow; front tibiæ short, distinctly dilated towards the extremity; their tarsi short and slender.

Tapajos; a single individual, of doubtful sex.

*Obs.*—The different shape of the head, more slender antennæ, and the differently-formed front tibiæ and tarsi, readily distinguish this species from *E. tibialis*; the individual described is perhaps somewhat immature.

10. *Echiaster scissus*, n. sp. Testaceus, dense punctatus, opacus, elytrorum apice medio, abdominisque apice fuscescentibus; capite lateribus curvatis, oculis minoribus; prothorace lato, suborbiculato, profunde bisulcato. Long. corp. (vix extenso) 1⅓ lin.

Antennæ rather slender; 1st joint stout and short, 2nd stout, 3rd and 4th very small, 6—10 each a little broader than its predecessor, 9 and 10 distinctly transverse, 11th rather short and stout. Head slightly broader than thorax, a good deal narrower than the elytra; the eyes small, the sides behind the eyes greatly rounded; the neck very slender, the middle of the surface much elevated, so that the vertical portion appears much depressed; yellow in colour, quite dull, densely and indistinctly punctured. Thorax short, about as long as broad, greatly narrower than the elytra, rounded at the sides, with two deep longitudinal impressions, so as to make it appear tricarinate, densely and indistinctly punctured, quite dull. Elytra much longer than the thorax, rather broad, yellow, with an infuscate patch in the middle at the extremity, densely punctured, quite dull. Hind body rather broad, the basal segments rather coarsely punctured, the 6th segment conical. Legs pale yellow; front tibiæ moderately broad, slightly sinuate.

Tapajos; a single specimen.

*Obs.*—The small eyes readily distinguish this species from all the others here described.

### Lindus (nov. gen. *Pæderinorum*).

Palpi maxillares articulo tertio magno, subsecuriformi, articulo quarto occulto.

Mandibulæ perelongatæ, tenues, valde curvatæ, edentatæ.

Tarsi anteriores fortiter dilatati, posteriore articulo quarto simplice.

Abdomen immarginatum, stylis duobus rigidis terminatum.

Genus perdistinctum, habitu *Pinophilinorum*, a quibus palporum maxillarium articulo 4° condito, et prothorace post coxas membranaceo differt.

Labrum transverse, with the horny part excessively short, and with two stout triangular teeth in the middle; from the outside of the teeth proceeds a white membrane, which extends all round the exposed part of the labrum, and much increases its size. Mandibles very slender, long, pointed and curved, and without any trace of teeth. First joint of maxillary palpi much shorter than the others, longer than broad; 2nd joint rather slender, more than twice as long as the 1st joint; 3rd joint longer than 2nd, much dilated, especially on the inner side, the extremity rather truncate; 4th joint quite invisible. Ligula broad in front and emarginate, so as to be in fact bilobed; paraglossæ very distinct and greatly developed, extending a good deal beyond the ligula, and distinctly beyond the base of the 2nd joint of labial palpi. First joint of labial palpi concealed in my preparation by the ligula and paraglossæ; 2nd joint cylindrical, quite twice as long as broad; 3rd joint not much more than half as broad as 2nd, about twice as long as broad. Antennæ rather stout, not thickened towards the extremity. Head short and transverse, with a moderately broad neck. Thorax transversely quadrate, with the base rounded, the side pieces broad throughout, and with a long projection near the hinder part; membranous under the coxæ; the coxal cavities thus forming two rather long oblique openings, which are confluent in their hinder part. Mesosternum forming chiefly a horny neck, only forming at the base of the middle coxæ a short angular projection. Middle coxal cavities large and deep, confluent. Hind body subcylindrical, only the basal segment margined, terminated in two stout, pointed, rigid styles. Wings present. Front tarsi with the four basal joints forming a broad patella; 5th joint slender and rather long. Legs moderately long and slender; 1st joint of hind tarsi a little longer than 2nd, 4th not at all lobed.

The curious insect for which I have established this genus has the hind body formed almost as in *Œdichirus*, and gives one, from its facies, the idea of a member of the *Pinophilini* rather than the *Pœderini;* nevertheless its syste-

matic position at present is in the *Pæderini*, in the neighbourhood of *Lithocharis;* but I have a strong impression that it will ultimately prove to be one of the steps of a transition to the *Pinophilini*.

1. *Lindus religans*, n. sp. Piceus, nitidus, subparallelus, antennis, pedibus, palpisque testaceis, elytris fortiter seriatim punctatis; abdomine parcius pubescente, crebre fortiter, profundeque punctato. Long. corp. 3—3¼ lin.

Antennæ reddish, rather shorter than head and thorax; 1st joint elongate, rather longer than 2nd and 3rd together; 3rd joint long, a good deal longer than 2nd, 5—10 each a little shorter, but scarcely broader than its predecessor, 10th about as long as broad; 11th joint short, with a slender spine or seta at its apex. Head short and broad, slightly narrower than the thorax; eyes large and prominent, separated by a narrow space only from the hind margin, with some coarse punctures at the sides and vertex, which are wanting along the middle. Thorax transverse, a little narrower than the elytra, nearly truncate in front, the front angles but little rounded, the base and hind angles rounded, the sides nearly straight and not narrowed behind; on either side of the middle is an irregular, longitudinal series or patch of rather coarse punctures, and between these and the sides are other scattered, pretty numerous punctures. Scutellum small, impunctate. Elytra longer than the thorax, quadrate, their extremity emarginate, depressed on either side of the finely-elevated suture; in the depression a series of rather coarse punctures, and outside this with several other series of coarse, deep punctures. Hind body stout; the basal segment margined at the sides, the others without margins, and each slightly narrower at the base than the extremity, very coarsely, closely and deeply punctured; the 6th and 7th segments more sparingly and more finely than the basal ones; hind margin of upper plate of 7th segment angulate in the middle, and spinous at each side; the connecting membranes of the segments coriaceous, as in the *Pinophilini*. Legs yellow.

In the male the hind margin of the ventral plate of the 6th segment of the hind body is slightly emarginate at the extremity, and is polished and depressed in front of this emargination, and the 7th segment has a large notch or excision in the same place.

Tapajos; four specimens of this interesting species were brought back by Mr. Bates, one of which, however, I have destroyed by an unfortunate accident during examination.

## Pæderus.

The species of this very widely-distributed genus brought from the Amazons are seven in number; they show nothing remarkable, their colour and appearance being very similar to our European species; they all have the mandibles with a simple bidentate tooth in the middle. Although scarcely a score of species of *Pæderus* have been as yet described from South America and Mexico, the species are really numerous there; the more remarkable of the South American forms of the genus, such as *P. rutilicornis* and *P. ferus*, appear to be unrepresented in the Amazons.

The species of the genus require careful study, and some of them have already given rise to much discussion; the structure of the ædeagus has been hitherto neglected; but when it is considered, it will, I have no doubt, be found to greatly facilitate the recognition and discrimination of the species.

1. *Pæderus solidus*, n. sp. Robustus, alatus, niger, elytris thorace paulo longioribus, cyaneis; abdomine segmentis quatuor primis, thorace, mesosternoque rufis, pedum basi antennarumque basi et apice testaceis, his medio infuscatis. Long. corp. 5—5¼ lin.

Antennæ 1⅝ lin. in length, 3 basal joints yellow, the next 6 strongly infuscate, the 10th infuscate-yellow, the last joint yellow. Palpi yellow, terminal joint infuscate at the apex; mandibles red. Head black, with the neck red, broad, a little broader than the thorax, rather sparingly and finely punctured; the punctures wanting towards the middle. Thorax bright red, longer than broad, about ⅞ lin. long and scarcely ¾ lin. broad, sparingly and finely punctured, with a broad impunctate space along the middle, the punctures bearing fine black hairs. Scutellum red, elytra blue, parallel, rather longer than thorax, from apex of scutellum to extremity of suture being quite ⅞ lin.; their common width also about ⅞ lin., rather finely and moderately closely punctured. Legs rather long; the coxæ and base of femora yellow, apical third of femora and the

tibiæ nearly black; the tarsi strongly infuscate. The central notch of labrum shallow, but rather broad.

The notch on the ventral plate of the 7th segment of the hind body in the male is very deep and parallel-sided. In the female the extremity of the same plate forms a large triangle, and on each side of this at the base is a stout, very short tooth.

Ega and Tapajos; several individuals.

This species is allied to *P. æquinoctialis*, Er., to judge from description. I have several closely-allied South American species, but fail to ascertain without doubt which of them is Erichson's species.

2. *Pæderus tridens*, n. sp. Angustulus, niger, elytris humeris angustatis, thorace fere brevioribus, cyaneis; abdominis segmentis quatuor primis, thorace, mesosterno, mandibulisque rufis; palpis, pedum basi, antennarum basi et apice testaceis, his medio fuscis; elytris crebre fortiter ruguloso-punctatis. Long. corp. $4\frac{1}{2}$ lin.

Antennæ slender, $1\frac{3}{4}$ lin. in length, 3 basal joints yellow, the 3 apical ones reddish, the middle ones deeply infuscate. Palpi yellow, apical joint obscurely infuscate at apex; mandibles and labrum reddish, the latter with the central excision very small. Head black, with the neck reddish, rather elongate, sparingly and finely punctured, the punctures wanting on the middle. Thorax red, not quite $\frac{7}{8}$ lin. in length, and not $\frac{3}{4}$ lin. in width, a good deal narrowed behind; the surface shining and almost impunctate. Elytra narrow, narrower at shoulders, their greatest length about that of the thorax, bluish-green; coarsely and rather deeply but irregularly punctured, so that the interstices are rugulose. Four basal segments of hind body red, the two apical ones blackish. Mesosternum and scutellum red. Legs long and slender, the coxæ and base of femora yellow; apex of femora infuscate, the hinder much more broadly so than the anterior; tibiæ and tarsi also infuscate.

In the female the ventral plate of the 7th segment of the hind body ends in an elongate pointed central spine in the middle, and on either side in a shorter slightly curved spine; the narrow tongue-like process, which forms the dorsal plate of the 8th segment, is much longer than the broader ventral plate.

Tunantins; a single female.

3. *Pæderus lingualis*, n. sp. Angustulus, niger, elytris angustis thoracis latitudine, cyaneis; abdominis segmentis quatuor primis, thorace, mesosterno, mandibulisque rufis; palpis, pedum basi, antennarum basi et apice testaceis, his medio nigris; elytris fortiter minus crebre punctatis. Long. corp. 5 lin.

This species resembles exactly the *P. tridens* above described, and appears to differ chiefly in the form of the labrum, the central notch being larger and much deeper; the elytra also are more sparingly punctured, the punctures being less deep and the interstices not so rugulose.

In the female the structure of the 7th segment of the hind body is the same as in *P. tridens;* but the narrow dorsal process of the 8th segment is less elongate than in *P. tridens*, and projects only a little beyond the ventral plate.

Ega; a single female.

4. *Pæderus mutans*, n. sp. Rufus, elytris viridi-cyanescentibus, antennis medio, pedibus basibus exceptis, metasterno, abdominisque segmentis duobus ultimis infuscatis; elytris thorace paulo longioribus, humeris distinctis, crebre minus fortiter punctatis. Long. corp. $4\frac{1}{2}$ lin.

Antennæ $1\frac{5}{8}$ lin. in length, yellow, with the five middle joints infuscate. Palpi yellow. Labrum with a very small notch in the middle and without lateral emargination. Head red, rather narrow in proportion to the length, finely punctured, the punctures wanting towards the middle. Thorax $\frac{3}{4}$ lin. in length and $\frac{5}{8}$ lin. in breadth, distinctly narrowed behind, finely and sparingly punctured, with a space along the middle free from punctures. Elytra of a rather faint bluish-green colour, $\frac{7}{8}$ lin. in length, the shoulders distinct and the sides parallel, their punctuation rather deep and close, but not coarse. Hind body red, with the apical segments infuscate. Legs with the coxæ and basal portion of femora yellow; the front femora entirely yellow, the four posterior ones and all the tibiæ and tarsi strongly infuscate.

The male has the usual excision on the ventral plate of the 7th segment of the hind body. In the female this plate ends in the middle in a large sharply-pointed tooth, and each outer angle is also produced and acuminate, a broad space being left between the central and each lateral tooth.

Tapajos and Pará, two ♂, two ♀ individuals.

I have also another female from Pará, which has the punctuation of the head coarser, and the sides of the central tooth of the 7th abdominal segment more oblique in direction, so that the tooth is broader at the base; whether this be a distinct species or a mere variety I am unable to decide without an examination of more specimens.

5. *Pæderus protensus*, n. sp. Angustulus, rufus, capite piceo, metasterno abdominisque apice fuscis; femoribus apice nigricantibus, tibiis, tarsis antennarumque articulis 4—7 infuscatis; elytris viridi-cyaneis, parallelis, thorace longioribus, crebre fortiter punctatis. Long. corp. 4 lin.

Antennæ 1⅜ lin. in length, slender, yellow, with the middle joints a little infuscate. Palpi yellow; mandibles red. Head pitchy, shining, rather sparingly and irregularly punctured. Thorax shining red, rather longer than broad, a good deal narrowed behind, very sparingly punctured. Scutellum red. Elytra shining bluish-green, ⅞ lin. in length, narrow and parallel, rather coarsely and deeply punctured, the punctures rather dense. Hind body red, with the apical segments pitchy. Mesosternum, coxæ and femora yellow, the apex of the four hind femora blackish; the tibiæ and tarsi infuscate-red, the tarsi slender.

The male has the usual deep excision on the ventral plate of the 7th segment. In the female this plate ends in a broad triangular projection, and each outer angle forms a short broad tooth.

Pará; four specimens collected by Mr. Rogers.

*Obs.*—This species appears to be closely allied to *P. mutans*, but is rather narrower and more slenderly formed and has the head darker. It is readily distinguished in the male sex by the structure of the ædeagus, which is produced at the extremity into a slender beak-like process. In the female the teeth of the ventral plate of the 7th segment are rather shorter and broader, and so appear less acuminate.

6. *Pæderus amazonicus*, n. sp. Rufus, capite nigricante subopaco; elytris cyaneis, thorace longioribus, crebre punctatus; metasterno, abdominis segmentis ultimis, femorumque apicibus infuscatis. Long. corp. 3½ lin.

Rather slender and elongate. Antennæ long, quite

yellow. Palpi yellow; mandibles red. Labrum pitchy, with a small notch in the middle; on either side of this a little prominent, and outside the prominence slightly emarginate. Head dull blackish, with the neck red; the surface finely coriaceous, sparingly and finely punctured. Thorax narrow, a good deal longer than broad, scarcely narrowed behind, bright red; finely and sparingly punctured, with an impunctate space along the middle. Elytra parallel, with the shoulders distinct, a little longer than the thorax, rather finely, moderately closely punctured, bluish or greenish. Hind body red, with the apical segments infuscate. Legs yellow; the apex of the hind femora distinctly, of the middle ones less distinctly, infuscate.

In the female the ventral plate of the 7th segment of the hind body is produced, so as to form a projecting triangle at the extremity; the apex of this triangle is scarcely pointed, the sides do not project in the form of teeth.

Ega and Tapajos; several individuals.

This species greatly resembles our European *P. fuscipes*, but is remarkably easily distinguished therefrom by the coriaceous surface of the head; it has also the antennæ and palpi differently coloured, these being clear yellow, and the elytra are less closely and distinctly punctured.

7. *Pæderus punctiger*, n. sp. Rufus, capite, pectore, abdominisque apice nigris, antennis fuscis, basi rufo; coxis femorumque basi rufescentibus, horum apice nigricantibus; tibiis tarsisque rufo-fuscis, elytris cyaneis, prothorace longioribus; capite thoraceque crebre punctatis. Long. corp. 4 lin.

Antennæ $1\frac{3}{8}$ lin. in length, the three basal joints reddish, the rest infuscate; 3rd joint much longer than 2nd, 4—10 each distinctly shorter than its predecessor, 10th much longer than broad. Mandibles red, infuscate at the apex; palpi red, infuscate towards the extremity. Head narrow, only about half as broad as the elytra, much narrowed behind the eyes, so that the constriction at the neck is but little; it is black in colour, with a blue tinge on its upper side; it is rather closely punctured, except on the middle of the hinder half, where the punctures are but sparing. Thorax small, greatly narrower than the elytra; towards the front it is a good deal narrowed; it is red in colour, and distinctly, regularly and rather closely punc-

tured, the punctures being absent on a narrow space along the middle. Elytra much longer than the thorax, $\frac{7}{8}$ lin. in length, dark bluish, rather finely but not densely punctured. Hind body dull red, with the two apical segments black. The coxæ are dark red, the femora blackish, with the basal part reddish; the tibiæ and tarsi obscure or infuscate red.

The male has a narrow deep excision, the sides of which are parallel, on the ventral plate of the 7th segment.

Carraranen, April, 1874; a single male brought back by Dr. Trail.

*Obs.*—The form and sculpture of the head and thorax render this species very easy to distinguish.

## Sunius.

This genus is one of the most troublesome, in the present state of our knowledge of the *Staphylinidæ*, to any one dealing with a limited fauna, owing to the variety of forms included in the genus itself, while at the same time a number of closely allied forms have been detached as distinct genera. The nineteen species here described as new species of the genus possess all, I believe, in common the following characters: terminal joint of maxillary palpi minute, anterior coxal cavities closed by the junction of the side pieces of the thorax with the large horny prosternum, 4th joint of tarsi consisting of a membrane embracing the under surface and sides of part of the 5th joint. This combination of characters is also found, I believe, in the genera *Acanthoglossa*, *Stiliderus*, *Neognathus*, *Mesumius*, *Nazeris*, *Sunides*, *Stilicopsis*, *Mecognathus* and *Dibelonetes;* but in the present state of our knowledge it seems to me that these genera can scarcely be maintained as distinct, especially while so many heterogeneous forms are still, as I have said, included in *Sunius*. Of the sixteen species here described the first six, viz., *S. amicus*, *S. vittatus*, *S. serpens*, *S. ventralis*, *S. strictus* and *S. marginatus*, have quite the facies of our European *S. filiformis*, and are probably structurally very closely allied thereto; while the next four, *S. brevis*, *S. modestus*, *S. crassus* and *S. pictus*, must be placed in the section "Spurii" of Erichson, their short, broad form giving them an entirely different facies from the *S. filiformis* group. *S. confinis*

and *S. catena* have the thorax more narrow and elongate than in the preceding species, and appear to afford a connecting link between *Stilicopsis* and *Sunius*. The *Sunides boreaphiloides* of Motsch. from Columbia, which is referred in the Munich Catalogue to the genus *Lithocharis*, appears to be an insect allied to *S. confinis*. The next two species, *S. bidens* and *S. bispinus* are possibly allies of the *Dibelonetes biplagiatus*, Sahl.; I say "possibly," because no characters are mentioned by Sahlberg which can be considered to distinguish his genus from *Sunius*, and I am in great doubt as to which one of several allied forms he intended so to name. The two following species, viz., *S. spinifer* and *S. celatus*, are very possibly but sexual forms of one species; they are very remarkable from the great development of the two spines of the labrum. *S. insignis*, the last of the species here described, is very peculiar on account of the abruptly constricted anterior portion of the thorax. From the above remarks it will be inferred that *Sunius* and its allies offer a prominent example of that insuperable difficulty in which those occupied with descriptive zoology find themselves constantly involved; for while it is clear that the only idea that can be formed of a genus is that of a limited aggregate of existing species, and consequently that no genus can be known till all the existing species of it are known, and till whether the characters assigned to it are naturally limited or not is known,—while this, I say, is clear, yet we are obliged to proceed in our actual descriptions on the absurd and "unthinkable" hypothesis that we know the genus before we know the species. I do not think naturalists have yet fully recognized this difficulty, but certainly until they have recognized it and are prepared to deal with it, it will be impossible that zoology can take the place it is entitled to as a most charming and important educational science. The present method of systematic zoology is certainly irreconcileable with a system of synthetic and inductive science, however well adapted it may have been to a period when educated minds were under the confusing domination of metaphysical inquiries.

1. *Sunius amicus*, n. sp. Nigricans, opacus, dense punctatus; antennis, palpis, pedibusque fere albidis, elytrorum apice anguste testaceo; abdomine subparallelo. Long. corp. $2\frac{1}{3}$ lin.

Antennæ very pale, not quite so long as head and

thorax, slender and scarcely thickened towards the apex; 2nd joint half as long as 1st; 3rd distinctly longer than 2nd, slightly longer than 4th; 4—7 scarcely differing from one another, 7—10 each very slightly shorter but scarcely stouter than the predecessor, 11th one and a half times the length of 10th. Head scarcely broader than thorax; eyes rather large and prominent, blackish or pitchy, quite dull; punctuation dense, very indistinct, consisting of large umbilicated punctures, separated by very fine interstices, with a fine pale pubescence and outstanding black setæ. Thorax about as broad as the elytra, a good deal narrowed behind, but broad at the base; colour, sculpture and pubescence similar to those of the head. Elytra only slightly longer than the thorax, pitchy, with a narrow band at the apex yellow; densely punctured, with rather fine granular punctures, quite dull. Hind body elongate and narrow, only a very little narrower at the extremity than at the base, dull, densely and finely punctured, with a fine but very distinct ashy pubescence. Legs very pale yellow.

In the male the 6th segment of the hind body has an ill-defined channel along the middle, which reaches neither the base nor the hind margin; the latter is hardly perceptibly emarginate, but is furnished in the middle with a row of very short, fine black setæ; the hinder part of the ventral plate of the next segment bears a rather deep excision.

Tapajos; one male and three female individuals.

*Obs. I.*—Rather closely allied to our European *S. diversus;* this species is readily distinguished, however, therefrom by its duller surface, longer antennæ, broader thorax and the narrower band of the elytra.

*Obs. II.*—Besides these individuals, I have from the same locality two specimens (♂ and ♀) which do not appear to me to differ from them in any material respect except that of colour. These two individuals are entirely of a pale-fulvous colour, and appear at first sight, therefore, very different from the dark individuals above described; but I consider them merely a variety of the species.

2. *Sunius vittatus*, n. sp. Elongatus, angustulus, parallelus, dense punctatus, antennis, palpis, pedibusque fere albidis, niger; elytrorum apice vittisque duabus longitudinalibus testaceis. Long. corp. 2 lin.

Extremely closely allied to *S. amicus*, but readily distinguished by the colour of the elytra, each of which has the outside occupied by a large black patch, which does not quite reach the apex; the suture also very narrowly blackish, the space between these black marks, as well as the apex, yellow. It is also rather more slender than *S. amicus*, and the male characters are different.

In the male the ventral plate of the 6th segment of the hind body has a broad longitudinal impression on the middle, its hind margin being quite simple; the hinder part of the ventral plate of the next segment bears a rather deep excision.

Tapajos; three males, two females.

3. *Sunius serpens*, n. sp. Angustus, testaceus, elytris maculâ mediâ abdomineque segmento 6° fuscis; dense punctatus, opacus; abdomine apicem versus latiore. Long. corp. $1\frac{3}{4}$ lin.

Antennæ not quite as long as head and thorax, pale yellow; 1st joint hardly longer than 3rd; 3rd much longer than 2nd, 4—6 differing little from one another; 7—10 each slightly shorter and scarcely broader than its predecessor, 11th distinctly thicker than 10th. Head broader than thorax, quite as broad as elytra, yellowish in colour, very densely and indistinctly punctured, dull; the punctures very shallow, the interstices very fine; eyes large, placed at the middle of the sides. Thorax longer than broad, a little narrower than the elytra, almost oval, the sides much narrowed behind; colour and sculpture similar to those of the head. Elytra narrow, rather longer than the thorax; rather paler in colour than the other parts, each with a dark oval spot on the middle nearer to the apex than to the base; rather coarsely but indistinctly and not densely punctured, not so dull as the other parts. Hind body elongate, very narrow at the base, broader towards the extremity, yellowish; the 6th segment blackish except at the extremity, quite dull, densely and finely punctured, with a very fine dense pubescence. Legs very pale.

The male has a rather deep excision at the extremity of the ventral plate of the 7th segment of the hind body.

Tapajos; numerous examples.

*Obs.*—This species greatly resembles the European *S. bimaculatus*, but is rather more slenderly formed, is of

a more uniform pale colour, and the sculpture of the upper surface is much finer. A closely allied but distinct species is found at Rio de Janeiro.

4. *Sunius ventralis*, n. sp. Fulvus, antennis, pedibus, palpisque fere albidis, abdomine segmento 6° dorsali basi obscuriore; capite thoraceque opacis, dense minus distincte punctatis; elytris parcius punctatis, nitidulis; abdomine apicem versus dilatato, parcius punctato, evidenter pubescente. Long. corp. 1¾ lin.

About the size of *S. angustatus*, but rather more slender. Antennæ long and slender, as long as head and thorax, scarcely thickened towards the apex, very pale yellow; 3rd joint much longer than 2nd. Labrum very short, with a slight notch in the middle, it is a little angular on each side of the notch. Head considerably broader than the thorax, about as broad as the elytra; eyes large, and placed at the middle of the sides, remote from the antennæ; the surface densely but indistinctly punctured, with the punctures large and ocellated, the interstices extremely fine. Thorax rather small, more than half as broad as the elytra, longer than broad, a good deal narrowed towards the base, and rounded in front; sculpture similar to that of the head. Elytra rather broad, short and convex, a little longer than the thorax, yellowish in colour, paler at the apex than at the base, on the middle of each an obsolete trace of a darker mark; the punctuation sparing at the extremity, closer at the base. Hind body convex, narrow at the base, a good deal broader towards the extremity, shining but for the long, fine pubescence; rather coarsely punctured, the punctures consisting of three rows of transversely placed punctures on each segment; these rows very distinct on the under side, much less distinct on the upper. Legs very pale yellow.

In the male the 6th segment of the hind body has on the under side a large, impunctate, longitudinal impression, and the following segment bears a small notch at the extremity.

Tapajos; a single male.

*Obs.*—This species is interesting from the peculiar, *Œdichirus*-like punctuation of the hind body.

5. *Sunius strictus*, n. sp. Nigricans, antennis, palpis, pedibus, elytrorumque apice pallide testaceis; elytris thoracis longitudine, rugulose punctatis. Long. corp. 2 lin.

Very similar at first sight to *S. angustatus*. Antennæ yellow, as long as head and thorax; 1st joint rather stout, 2nd more slender and a good deal longer than 3rd; 4—7 slender, 8—10 each a little thicker than its predecessor, 10th more than twice as long as broad, 11th distinctly stouter and a good deal longer than 10th. Mandibles elongate, yellow. Head broader than the thorax, about as broad as the elytra, blackish, with reticulate punctuation, which becomes more rugulose on the vertex. Thorax small, rather longer than broad, much narrower than the elytra; much narrowed towards the base, and more abruptly towards the front, blackish, with a coarse, reticulate sculpture. Elytra broad and short, scarcely longer than the thorax, black, with the apical portion pale yellow, the pale part slightly broader near the suture than at the sides; they are densely, rather coarsely and rugulosely punctured. Hind body blackish, with the hind part of the 6th and following segment paler: it is rather stout and convex, but a good deal narrowed at the base; it is coarsely punctured. The legs are rather short, and almost white.

Rio Purus; a single female, taken by Dr. Trail on the 13th October, 1874.

*Obs.*—This species much resembles our European *S. angustatus*, but is slightly larger, the antennæ are considerably longer, the elytra are shorter and more rugulosely punctured, and the pale colour does not extend so far forwards along the suture; the hind body is more constricted at the base, and the eyes are a good deal larger.

6. *Sunius marginatus*, n. sp. Niger, fortiter punctatus, antennis elongatis, pedibusque pallide testaceis: elytris thorace longioribus, apice late testaceis. Long. corp. 2 lin.

Antennæ slender, quite as long as head and thorax; the 10th joint scarcely visibly thicker than the preceding ones, and the 11th only very slightly thicker than 10th. Head coarsely punctured, and with reticulate sculpture. Thorax with reticulate sculpture, of which the meshes are large and distinct. Elytra rather longer than the thorax, with a coarse and rather distinct punctuation, black, with the hind margin yellow, the yellow colour extending much farther forwards along the suture than elsewhere. Hind body rather coarsely punctured, and with distinct, rather coarse pubescence and setæ.

Pará; a single female captured by Mr. Rogers.

*Obs.*—The resemblance of this species to *S. angustatus* is at first extreme; not only is the general form and outline similar, but the colours of the elytra are similarly disposed; nevertheless, the two species are very different when compared. *S. marginatus* has the antennæ very much longer, the eyes larger, the thorax more elongate, and the sculpture coarser and less dense. *S. marginatus* is closely allied to *S. strictus*, but has the sculpture coarser, less dense, and therefore more distinct; the elytra rather longer, and the colours differently disposed, and the intermediate joints of the antennæ rather more elongate.

7. *Sunius brevis*, n. sp. Brevior, latiusculus, parallelus, testaceus, capite thoraceque rufescentibus, elytris maculâ laterali nigrâ; opacus, dense punctatus; capite subquadrato, oculis prominulis; thorace transverso. Long. corp. $1\frac{1}{3}$ lin.

Antennæ pale yellow, rather slender, a little shorter than head and thorax; 1st joint elongate, as long as the three following together, 3rd a little longer than 2nd; the joints from 4—10 slightly thickened, the 10th being distinctly broader and shorter than the 4th, but not so broad as long; 11th joint rather stout, and a good deal longer than 10th. Labrum large, oblique on each side, so as to be prominent in the middle, the most projecting part with a slight notch. Mandibles moderately long; the left with one, the right with two teeth. Head broad, quite as broad as the elytra; the eyes large and prominent, placed in the middle of the sides, the vertex appearing emarginate in front of the neck; the hind angles about right angles, and a little rounded; the surface dull, densely punctured with large but indistinct punctures, the interstices of which are extremely fine. Thorax about as broad as the elytra, distinctly transverse; the front rounded, the sides a little narrowed behind; the surface densely punctured, in a similar manner to the head. Elytra yellow, paler than the head and thorax; the side of each with an ill-defined spot, distinctly longer than the thorax, rather closely punctured. Hind body broad and short, very finely punctured. Legs pale yellow, rather short.

In the male the hind margin of the ventral plate of the 6th segment of the hind body is slightly emarginate on

each side of the middle; that of the 7th segment is broadly emarginate.

Ega; one male and one female.

8. *Sunius modestus*, n. sp. Brevior, latiusculus, parallelus, testaceus, capite picco-rufo, thorace rufescente; dense punctatus, subopacus; capite subquadrato; thorace transverso. Long. corp. $1\frac{1}{3}$ lin.

This species is extremely close to *S. brevis*, but the head and thorax are not quite so broad; the elytra are without lateral mark; the head is darker in colour, and its punctuation is more conspicuous, and joints 3—10 of the antennæ are not quite so elongate. These differences are but slight however.

In the male the hind margin of the 7th segment is broadly emarginate; and the 6th segment, instead of being emarginate on either side as in *S. brevis*, has a single broad, rather deep emargination, extending from side to side, like that of the 7th segment.

Tapajos; one male and one female.

9. *Sunius crassus*, n. sp. Brevior, latiusculus, parallelus, testaceus, capite thoraceque rufescentibus; dense punctatus; capite subquadrato; thorace transverso, elytris hoc paulo longioribus, subnitidis, sat crebre punctatis. Long. corp. $1\frac{1}{3}$ lin.

Extremely closely allied to *S. brevis*, but not quite so dull; the head and thorax rather more distinctly punctured, the thorax not quite so transverse; the elytra more sparingly punctured and distinctly shining, and without lateral mark, and the antennæ a little shorter. Even more closely allied to *S. modestus*, but with the head rather broader and paler in colour, and the elytra more distinctly less closely punctured.

Tapajos; a single female.

10. *Sunius pictus*, n. sp. Latus, subparallelus, testaceus, capite thoraceque rufescentibus, elytris maculâ laterali suturâque nigricantibus, abdominis segmento 5° infuscato; dense punctatus, fere opacus. Long. corp. $1\frac{1}{2}$ lin.

Antennæ pale yellow, rather slender, shorter than head and thorax; 1st joint almost as long as the three following together, 3rd quite as long as 2nd, each slightly shorter

than its predecessor, 7—9 differing little from one another, 10th slightly stouter and shorter than 9th, small, about as long as broad; 11th joint a good deal longer and distinctly stouter than 10th. Head large, subquadrate; the eyes prominent and rather large; the vertex straight, but emarginate at the neck; the hind angles but slightly rounded, reddish, densely punctured, the punctures distinct, and each umbilicate, the interstices extremely fine. Thorax scarcely narrower than the head, and very slightly narrower than the elytra, nearly as long as broad; the front rounded, the sides slightly convergent behind; the colour and sculpture similar to those of the head, but the latter rather finer and less distinct. Elytra rather longer than the thorax, quadrate, rather finely and closely punctured; a large spot on the side of each black, and the suture also blackish, but with this colour not reaching to the scutellum. Hind body broad and short, densely, finely and indistinctly punctured; the basal segments reddish, the 5th infuscate, the 6th pale yellow. Legs pale yellow, rather short.

Ega; a single female.

*Obs.*—This species is closely allied to *S. brevis*, but is larger, and its thorax is less transverse; I have not been able to examine satisfactorily the mandibles and labrum of the only individual I possess, but from what I can see of them, I have little doubt they are very similar to those of *S. brevis*.

11. *Sunius confinis*, n. sp. Rufescens, antennis, pedibus, elytrisque testaceis; capite thoraceque dense punctatis, fere opacis, hoc elytris multo breviore et angustiore; elytris leviter nitidulis, crebre punctatis. Long. corp. 1½ lin.

Antennæ pale yellow, moderately slender, shorter than head and thorax; 1st joint almost as long as the three following together; 3rd joint about as long as, but a good deal thinner than 2nd, 5—10 scarcely differing in length, each about as long as broad, and just a little broader than its predecessor; 11th distinctly stouter than the 10th. Labrum with two short but distinct denticles in the middle. Mandibles moderately long and slender, their teeth very indistinct. Head rather long and narrow, distinctly broader than thorax, and narrower than elytra; the eyes placed in the middle of the sides, convex and prominent, the hind angles rounded; reddish in colour,

densely but not very distinctly punctured, the interstices extremely fine. Thorax rather small, a little longer than broad, much narrower than the elytra; its greatest width in front of the middle, thence much narrowed towards the front, and slightly towards the base; colour and sculpture similar to those of the head. Elytra rather elongate, much longer than the thorax, a little narrowed towards the shoulders, yellow, distinctly and moderately closely and finely punctured. Hind body broad and rather short, tawny in colour, dull, very finely punctured and pubescent. Legs pale yellow, moderately long.

Ega; a single female.

12. *Sunius catena*, n. sp. Rufescens, antennis, pedibus, elytrisque testaceis; capite thoraceque dense punctatis, opacis, hoc sat elongato, capite angustiore; elytris thoracis longitudine, crebre punctatis, leviter nitidulis. Long. corp. $1\frac{1}{2}$ lin.

Antennæ pale yellow, moderately slender; 1st joint as long as the three following together; joints 6—10 each slightly broader than its predecessor, the 10th almost transverse, 11th rather stouter than 10th. Labrum large, with two very approximate denticles in the middle, and with an extremely small one on either side of these. Head large, broader than the thorax, and quite as broad as the elytra, the hind angles quite rounded, the eyes prominent; reddish in colour, densely punctured, with the interstices very fine. Thorax a good deal narrower than the elytra, rather longer than broad; its greatest breadth in front of the middle, thence much narrowed towards the front, and distinctly towards the base; reddish, quite dull, densely punctured. Elytra quite as long as the thorax, quadrate, yellow, distinctly, moderately closely punctured, a little shining. Hind body broad, rounded at the sides, yellowish, densely and finely punctured. Legs pale yellow.

In the male the hind margin of the ventral plate of the 6th segment of the hind body is broadly but shallowly emarginate; the 7th segment is concealed in the example described.

Ega; a single male.

*Obs.* — This species is readily distinguished from *S. confinis* by its broader form and shorter elytra. I have been unable to keep open the mandibles for proper examination, but I think they are longer and have the teeth

more distinct than in *S. confinis*. The insect greatly suggests by its form and colour a *Boreaphilus*, and makes a great approach to *Stilicopsis paradoxus*, Sachse.

13. *Sunius peltatus*, n. sp. Rufo-testaceus, antennis pedibusque testaceis; elytris abdominisque segmento 5° infuscatis, illis apice late testaceis; capite magno, subquadrato, anterius dense punctato, vertice sublævigato; thorace suborbiculato. Long. corp. $1\frac{2}{3}$ lin.

Antennæ slender, pale yellow, shorter than head and thorax, not thickened towards the extremity; 1st joint elongate, about as long as the three following together; 2nd joint rather slender, 3rd distinctly longer than 2nd, 4—10 each slightly shorter than its predecessor; 11th longer, but scarcely broader, than 10th, oblique at the extremity. Mandibles elongate and slender, the left one with two teeth, of which the upper one is elongate. Labrum much produced towards the front in the middle, the prominent part terminating in two distinct teeth. Head much larger than thorax, and even broader than the elytra; the eyes large and convex, placed in the middle of the sides, the hind angles not much rounded, the vertex emarginate in front of the neck; reddish in colour, closely finely and not very distinctly punctured, with extremely fine interstices, the punctuation becoming obsolete in the middle towards the vertex, so that in front of the emargination it is represented only by some fine granules. Thorax small, much narrower than the elytra, not longer than broad; the greatest width in front of the middle, thence much narrowed towards the front, and distinctly towards the base; reddish in colour, densely punctured, with very fine interstices. Elytra rather broad and short, a little longer than the thorax, infuscate, so as to approach blackish in colour; the extreme base obscurely reddish, the apex broadly, and abruptly, pale yellow; rather closely and distinctly punctured. Hind body broad, very finely punctured; the basal segments reddish, the 5th infuscate, the apical ones yellowish. Legs pale yellow.

Ega; a single female.

*Obs.*—This species in its general form makes a distinct approach to *Stilicus*.

14. *Sunius palpalis*, n. sp. Antennis, palpis, pedibusque pallide testaceis, femoribus quatuor posterioribus apice

late fuscis; capite thoraceque infuscato-rufis, illo vertice rotundato, hoc apicem versus fortiter angustato; elytris quadratis, summo basi rufescente, apice late testaceo, medio nigricantibus; abdomine nigricante, segmentis duobus basalibus rufescentibus, apice testaceo. Long. corp. $1\frac{3}{4}$ lin.

Antennæ elongate and slender, almost geniculate, not thickened towards the extremity; 1st joint elongate, as long as the three following together; 2nd joint rather long, 3rd more slender than, but about as long as 2nd, 5—10 each a little shorter than its predecessor, 11th rather long, slightly stouter than, and twice as long as the 10th. Mandibles elongate, the left one with two teeth, of which the upper one is elongate, the right one with three rather large teeth. Labrum large, the middle prominent, and with two rather long and slender teeth, and on each side of these with a small obscure one. Maxillary palpi pale yellow; 2nd and 3rd joints elongate and slender, the 3rd being about four times as long as broad. Head rather large, broader than the thorax and quite as broad as the elytra, the vertex rounded, the neck narrow, the eyes remote from the antennæ, the colour pitchy or infuscate red; the surface rather coarsely punctured, with the usual *Sunius* punctuation. Thorax a good deal narrower than the elytra, rather longer than broad; the greatest width in front of the middle, thence abruptly narrowed to the front, and a good deal towards the base; in colour and sculpture similar to the head. Elytra quadrate, a little longer than the thorax, blackish, with the extremity rather broadly pale yellow; the base reddish, moderately closely, quite distinctly punctured, a little shining. Hind body finely punctured; the two basal segments reddish, the three following ones blackish, the extremity yellow. Legs long and slender, the four hinder femora with a broad band of dark colour at the extremity.

Ega; two female individuals.

*Obs.*—This species in its general form differs little from *Stilicus*.

15. *Sunius bidens*, n. sp. Elongatus, angustulus, subcylindricus, testaceus, elytris medio puncto fusco notatis; antennis elongatis, tenuibus; labro medio obtuse bidentato. Long. corp. $2\frac{1}{2}$ lin.

Antennæ almost white, very slender, rather longer than

head and thorax; 1st joint elongate and slender, not quite so long as the three following together; 2nd joint rather long; 3rd joint elongate and very slender, longer than 2nd; 4—10 each very slender, each slightly shorter than its predecessor, even the 10th three times as long as broad; 11th slender, but distinctly stouter than the preceding ones, rather longer than 10th. Labrum large, with two short, obtuse denticles in the middle, forming its most prominent part; slightly emarginate on each side of these, and thence falling away on either side as an oblique sinuation to the lateral angle. Mandibles elongate, abruptly curved, stout at the base; the left in the middle with a large stout tooth, which is slightly emarginate on its inner side; the right one with two rather large teeth, of which the upper one is the longer. Head broader than the thorax, quite as broad as the elytra; the eyes large, and very outstanding in front; the sides behind the eyes rounded and narrowed in a curve to the neck, yellowish in colour, rather flat; the surface with *Sunius* punctuation, forming rather large meshes, but immediately in front of the neck the sculpture obsolete; the underside almost impunctate. Thorax a good deal narrower than the elytra, the sides in front of the middle much rounded and narrowed to the neck, only very slightly curved, and narrowed from the widest part to the base; its colour and sculpture similar to the head. Elytra elongate, one and a half times the length of the thorax, yellowish, each with a dark spot on the middle, moderately finely and closely punctured. Hind body elongate and slender, dull, but only sparingly and indistinctly punctured. Legs elongate, very pale.

In the male the hind margin of the ventral plate of the 6th segment is broadly but slightly emarginate; the 7th has a very large and deep semicircular excision.

Ega; a single individual.

16. *Sunius bispinus*, n. sp. Elongatus, subcylindricus, testaceus, elytris abdomineque minus distincte fusco-variegatis; antennis elongatis, tenuibus, labro medio breviter bispinoso. Long. corp. $2\frac{3}{4}$ lin.

Antennæ almost white, elongate and slender; joints 8—10, though very slender, each distinctly stouter than its predecessor; 11th joint a good deal stouter and a little longer than the 10th. Labrum large, with two short, distinct spines in the middle. Thorax rather broad,

but much narrower than the elytra, a good deal longer than broad. Elytra distinctly longer than the thorax, rather coarsely, closely and deeply punctured, marked each with an indistinct fuscous spot on the middle, and with a common one on the suture, towards the extremity. Hind body indistinctly and sparingly punctured, each segment with a longitudinal fuscous mark on each side, close to the margin, and the 6th with the base transversely marked with the same colour.

In the male the hind margin of the ventral plate of the 6th segment of the hind body is broadly but not deeply emarginate; the 7th has a rather broad and moderately deep subtriangular excision, the lower angles of which are quite rounded.

Tapajos; a single male.

*Obs.*—This species appears at first sight to be very closely allied to *S. bidens*, but when examined is found to be very distinct. *S. bispinus* is much broader, has the teeth of the labrum more elongate, the 10th joint of the antennæ stouter, and the notch of the 7th segment of hind body very different in form.

17. *Sunius spinifer*, n. sp. Elongatus, castaneus, capite thoraceque plus minusve infuscatis, illo elongato, labro spinis duabus elongatis armato; elytris nitidulis, fortiter punctatis, maculâ mediâ fuscâ; antennis tenuibus, perelongatis. Long. corp. $3\frac{1}{2}$ lin.

Antennæ very slender and elongate, nearly $1\frac{1}{2}$ lin. in length, quite filiform; 3rd joint very elongate, about as long as the basal joint; joints 4—10 differing from one another only in those nearest the apex being a little shorter; 11th joint elongate, pointed, slightly stouter and but little longer than 10th. Labrum large, in the middle with two straight, slender, elongate spines, and angulate on each side of these. Mandibles extremely elongate, toothed near the base with two teeth, of which the lower is very small. Head very elongate, the eyes convex, placed rather nearer to the antennæ than to the vertex, the sides behind the eyes narrowed in a gradual curve to the neck; pitchy in colour, with the usual *Sunius* sculpture, which is rather coarse and conspicuous; beneath with moderately coarse impressed punctures. Thorax much narrower than the elytra, longer than broad, transversely convex; the greatest breadth in front of the middle, thence much narrowed

towards the front and slightly towards the base: blackish in colour (or reddish if immature), coarsely sculptured in a similar manner to the head, the sides towards the front appearing serrate. Elytra rather longer than the thorax, of a shining castaneous colour, with a dark spot on the middle, rather coarsely and deeply but not densely punctured. Hind body with the segments sericeous and coriaceous at the base, the hind portion of each shining and punctured, the punctures rather obsolete but moderately coarse; beneath entirely with a peculiar silky lustre and very obsoletely punctured. Legs yellow; the apex of the femora slightly infuscate.

In the male the ventral plate of the 6th segment is considerably shorter than the dorsal plate and is a little emarginate, and the ventral plate of the following segment is broadly but not deeply excised. The ædeagus itself is provided at the extremity with a slender elongate appendage, which is quite as long as the body of the organ; this appendage is sinuate in the middle, and furnished at the apex with an abruptly inflexed additional piece, giving its apex the form of a hook.

Ega; three individuals,—two males, one female.

18. *Sunius celatus*, n. sp. Elongatus, castaneus, capite thoraceque nigris, illo elongato, labro spinis duabus elongatis armato; elytris nitidulis, fortiter punctatis, maculâ mediâ fuscâ; antennis tenuibus perelongatis. Long. corp. $3\frac{1}{2}$ lin.

In the male the ædeagus is furnished with an elongate and rather broad strap-like appendage, which is shorter than the body of the organ, a little constricted in the middle and furnished at the extremity with a very small abruptly inflexed additional piece.

Tapajos; a single male.

*Obs.*—The single individual before me seems to me to offer no certain character to distinguish it from *S. spinifer*, except the difference in the ædeagus; as the form and length of the appendage of this organ is quite the same in the two males from Ega, I have thought it advisable to consider the Tapajos individual as indicating a different species, though further researches on an additional number of specimens will be necessary before this can be considered to be certainly established.

19. *Sunius insignis*, n. sp. Castaneus, nitidulus, an-

tennis pedibusque testaceis, elytris oblique fusco-signatis; thorace lateribus rotundatis, anterius subito constrictis, crebre punctato, utrinque longitudinaliter impresso; abdomine latiusculo, minus distincte punctato. Long. corp. 2 lin.

Antennæ pale yellow, of the ordinary *Sunius* structure, about as long as head and thorax, slender; 3rd joint much longer than 2nd, 4—10 each shorter than its predecessor, 8—10 each slightly less slender than its predecessor, 10th longer than broad, 11th rather stouter and a good deal longer than 10th. Labrum very large, the middle part much produced, and the most projecting part truncate, without notch or teeth. Mandibles moderately long, much curved; the left with two, the right with three teeth in the middle. Head shining chestnut in colour, of the usual *Sunius* form, but more gradually narrowed behind towards the slender neck; it is only sparingly and indistinctly punctured. Thorax narrower than the elytra, of a singular, somewhat flask-shaped, form; the sides of the hinder portion rounded, then abruptly narrowed in front of the middle to make a slender neck; the middle part is more elevated than the sides, so that there is the appearance of a longitudinal depression on each side; it is of a brownish or chestnut colour and is rather coarsely punctured; it has a narrow impunctate line along the middle, and the lateral portions are only indistinctly punctured. Elytra about as long as thorax, rather shining, of a chestnut colour, each with a darker oblique mark across the middle, and the outer angle a little paler; they are rather deeply, somewhat coarsely and closely punctured. Hind body broad, chestnut-yellow, a little shining; the front portion of the two or three basal segments rather distinctly punctured, the rest scarcely visibly punctured. Legs very pale yellow; the first joint of the hind tarsus about as long as the other four together.

A single female of this extremely remarkable species was captured by Dr. Trail on the 5th November, 1874; but he has not transmitted to me the exact locality.

### Tænodema.

This genus consists at most of seven or eight described species, two only having been known to Erichson; nevertheless I have described here eighteen species, and have quite a dozen others in my collection. The genus appears

to me one of the most characteristic of the South American *Staphylinidæ;* it has not yet occurred in Mexico or away from the tropical parts of the South American continent, and I know of no similar insects in the Old World. The species here described show a considerable variation of size, form and appearance, though some of them are excessively closely allied *inter se.* They are apparently very rare, and I have had great difficulty in making up my mind as to whether certain of the forms should be treated as species or varieties; it is possible that I may in some cases have come to wrong conclusions on this point, although I have made a very careful examination in each case before coming to a decision.

1. *Tænodema plana*, n. sp. Nigra, capite, thorace, elytrisque æneis, abdomine segmentis 4°, 5°, 7°que ex parte rufis; thorace parce, irregulariter, dorso sub-biseriatim punctato. Long. corp. 11 lin.; lat. (elytrorum) 2 lin.

Antennæ black, rather slender, nearly as thick at the extremity as at the base, about as long as head and thorax (3 lines in length); 3rd joint nearly twice as long as 2nd, 11th slightly longer than 10th. Head distinctly narrower than the thorax, with a large shallow impression on each side in front; its surface with the middle and vertical portions nearly impunctate, the impressions coarsely punctured; some coarse scattered punctures behind the labrum, and a few very coarse rugose punctures on the inner side of the hind part of the eye; besides the coarse punctures the surface is sparingly sprinkled with some minute punctures. Thorax about as long as broad, slightly rounded at the sides, dark brassy, shining, sparingly and rather finely punctured; the punctures irregularly distributed, consisting of two longitudinal patches along the middle separated by a broad irregular space, and outside these with some punctures towards the sides, the front part (behind the eyes) slightly raised and smooth; besides the larger punctures with a few minute punctures, which are most visible about the sides. Scutellum narrow and elongate, with a few coarse punctures. Elytra about as long as, and scarcely broader than, the thorax, dark brassy, with some coarse punctures scattered over them; the hinder external angles much rounded, and, as well as the projecting humeral angles, free from punctures. Hind body

elongate, black; on the upper side the 4th segment has a large red blotch on each side; the hinder half of the 5th and of the 7th segments red, the basal portions of the segments with coarse but not dense punctures; on the underside black, with the hind part of the 7th and small patches at the angles of the 4th and 5th segments red, very coarsely punctured, each of the terminal segments with a small smooth space towards the extremity. Legs quite black.

Ega; a single female; also a variety from the Upper Amazons, brighter in colour, punctuation slightly coarser, and thorax obsoletely bi-impressed; this variety also represented by only a single female.

The *Staphylinus æneus* of Olivier, from Surinam, is probably a closely allied species.

2. *Tænodema lævis*, n. sp. Elongata, nitida, nigra, capite thoraceque superne viridi-æneis, elytris violaceo-cæruleis; abdominis apice rufo, antennarum basi palpisque testaceis. Long. corp. 8 lin.; lat. elytrorum $1\frac{1}{4}$ lin.

Mas: abdomine segmento 7° ventrali apice medio triangulariter exciso.

Antennæ rather slender, $1\frac{3}{4}$ lin. in length, black, the two basal joints yellow but infuscate inwardly; 3rd joint twice as long as 2nd, the apical joints slender. Palpi obscure yellow; mandibles pitchy. Head above shining brassy, the front part coarsely punctured; a space in front of the vertex nearly impunctate, the vertex on either side coarsely punctured. Thorax a little longer than broad, $1\frac{1}{8}$ lin. in length, 1 lin. in breadth, nearly parallel-sided, similar in colour to the head, with a longitudinal patch of punctures on each side the middle, with some other coarse punctures at the side about one-third of the length from the front, and three or four others behind these, and also with some fine punctures scattered sparingly over the surface. Scutellum same colour as head and thorax, with a few rather coarse punctures. Elytra scarcely longer than the thorax, violet, but blue at the base, smooth and shining, very sparingly punctured, the punctures becoming extremely fine and sparing towards the extremity. Hind body shining black; the 7th segment (except its base) and the 8th bright-orange colour, each segment at its base with a few coarse but obsolete punctures. Legs and under surface (except extremity) black; under face of hind body

coarsely but not densely punctured; front tarsi infuscate-yellow.

St. Paulo; two individuals, ♂ and ♀.

Apart from its beautiful colour, this species, though clothed with long black setæ, is remarkable for the very scanty pubescence of the upper surface.

3. *Tænodema recta*, n. sp. Nigra, nitida, capite, thorace, elytrisque viridi-æneis, his apicem versus cyanescentibus; palpis antennarumque articulis basalibus testaceis, his intus infuscatis, tarsis anterioribus fusco-testaceis; capite thoraceque fortiter inæqualiter, elytris parcius subtiliter, punctatis. Long. corp. 7 lin.; lat. elytrorum $1\frac{1}{8}$ lin. (vix).

Mas latet.

Elongate and narrow; antennæ rather slender, $1\frac{1}{2}$ lin. in length, not thickened towards the extremity, black, with the two basal joints yellow, but infuscate inwardly; 3rd joint about twice as long as 2nd. Palpi yellow; mandibles pitchy black. Head on the upper surface pale brassy, coarsely punctured, only a narrow transverse space between the eyes being impunctate; the punctures are umbilicate, each bears a fine pale hair. Thorax nearly as long as broad (about 1 lin. broad, and $\frac{15}{16}$ long); it is a little rounded at the sides, and slightly narrowed behind, similar in colour to the head; the surface is rather closely but unequally covered with punctures, the punctures wanting on a space on each side near the front angles, also on a very small longitudinal space in front of the base in the middle, and more sparing about the margins than they are on the disc; the punctures are of unequal sizes, the larger ones being umbilicate. Scutellum brassy, punctured. Elytra quite $1\frac{1}{8}$ lin. in length, shining metallic, the basal part similar in colour to the head and thorax, the apical part blue; they are sparingly punctured, the punctures are all fine, those at the base being coarser than the extremely fine ones at the extremity. Hind body long and slender, entirely black; on the upper side the basal segments are rather coarsely but not closely nor deeply punctured on their anterior portions; the 6th and 7th segments more finely and sparingly punctured, the latter towards the extremity with the setæ shorter and coarser; on the under surface the punctuation of the basal segments is deeper and coarser, but on the 7th segment it is finer

than on the upper surface, as the setigerous punctures are not so conspicuous; on both faces it is furnished with conspicuous black setæ of various lengths, but is otherwise quite destitute of pubescence; the upper surface of the front tarsi is infuscate-yellow.

Ega; a single female individual.

4. *Tænodema lenta*, n. sp. Nigra, nitida, capite, thorace, elytrisque viridi-æneis; palpis, antennarum basi, tarsisque anterioribus testaceis; capite thoraceque fortiter, elytris parce subtiliter, punctatis. Long. corp. 7½ lin.; lat. elytrorum 1 lin.

Mas: abdomine segmento 7° ventrali apice late, paulum profunde emarginato.

Elongate and narrow; antennæ slender, about 1¾ lin. in length; the two basal joints yellow, very slightly infuscate inwardly; the apical joint pitchy, 3rd one and a half times as long as 2nd. Palpi yellow; mandibles pitchy at the base, red at the apex. Head small, on the upper surface shining brassy, densely and coarsely punctured, a transverse space in front of the vertex impunctate; the punctures are umbilicate, and bear each a fine pale hair. Thorax ⅞ lin. long, and not quite 1 lin. broad, distinctly rounded at the sides, similar in colour to the head, very shining, coarsely punctured, the punctures irregularly distributed, wanting on a space near the front angles; two elongate patches of punctures along the middle separated by an indistinct space, bearing finer punctures, which are absent in front of the base; the marginal portions coarsely but not densely punctured, the larger punctures umbilicate. Scutellum concolorous, slightly punctured. Elytra over 1 line in length, similar in colour to the thorax, very shining, greenish brassy, very sparingly and finely punctured, the apical punctures finer than the basal ones. Hind body elongate, and very narrow, black, the basal segments coarsely but not deeply nor densely punctured, their hind margins impunctate; 6th and 7th segments very sparingly punctured, the hind margin of the latter obscure reddish; the under surface coarsely punctured, the punctuation of the 7th segment rather coarse but obsolete, the hind margin reddish; the terminal segment obscurely reddish beneath, pitchy above; front tarsi yellow.

The male has the hind margin of the 7th ventral segment broadly but not deeply emarginate at the extremity.

Ega; a single male.

Very closely allied to *T. recta;* rather more slender, 3rd joint of antennæ shorter, the front parts more shining.

5. *Tænodema dubia,* n. sp. Nigra, nitida, capite, thorace, elytrisque viridi-æneis; palpis, antennarum basi tarsisque anterioribus testaceis; capite thoraceque fortiter, elytris parce subtiliter, punctatis. Long. corp. $6\frac{1}{2}$ lin.

Mas: abdomine segmento 7° ventrali apice late, paulum profunde emarginato.

Elongate and narrow; antennæ slender, $1\frac{1}{4}$ lin. in length, black, with the two basal joints yellow and infuscate inwardly; 3rd joint one and a half times as long as 2nd. Head small, coarsely and densely punctured, except on a space in front of the vertex. Thorax $\frac{3}{4}$ lin. in length, and hardly broader than long, very little rounded at the sides, and slightly narrowed behind. Scutellum with a few fine punctures. Elytra 1 lin. in length. Hind body nearly concolorous at the extremity.

Ega; a single male.

This may possibly prove to be only an individual variation of *Tænodema lenta;* it differs only from it in being rather smaller, and having the front parts rather narrower, the thorax being a little less rounded at the sides, rather more coarsely punctured along the middle, the punctuation of the hind body rather less, and the legs a little shorter.

6. *Tænodema quadrata,* n. sp. Nigra, nitida, capite, thorace, elytrisque viridi-æneis, antennarum basi, palpis, tarsisque anterioribus testaceis; antennis apice piceis; capite thoraceque fortiter punctatis, elytris subtiliter punctatis, punctis suturalibus magis numerosis. Long. corp. 6 lin.

Antennæ about $1\frac{1}{4}$ lin. in length, the two basal joints yellow, the intermediate ones nearly black, the apical joint pitchy yellow; 3rd joint about one and a half times as long as 2nd. Head small, rather closely punctured, a space in front of the vertex impunctate, the punctures on the front part forming a patch in the middle and a patch on each side, but the three patches only a little separate; vertex rather finely punctured. Thorax not quite so long as broad, nearly $\frac{7}{8}$ lin. in length, a little rounded at the sides, not narrowed behind, shining, coarsely punctured, the punctures more sparing towards the margins, and

wanting on a space near the front angle. Scutellum finely but rather closely punctured. Elytra about 1 line in length and rather broader than long, brassy-green, shading into bluish at the sides and extremity, very shining, finely and sparingly punctured, the punctures almost wanting towards the extremity, and closer together along the suture, especially at the base. Hind body quite black. Legs rather short.

Ega; a single female.

This species is again very closely allied to *T. lenta*, but is shorter but not narrower; the elytra are distinctly more quadrate, and the legs a little shorter.

7. *Tænodema tarsalis*, n. sp. Nigra, nitida, capite, thorace, elytrisque viridi-æneis; antennarum basi, palpis, tarsisque anterioribus testaceis; capite thoraceque fortiter, elytris parce subtiliter, punctatis, punctis suturam versus magis numerosis. Long. corp. $5\frac{1}{2}$ lin.

Antennæ slender, just over a line in length, black, with the two basal joints yellow, the apical joint nearly black; the 3rd joint one and a half times as long as the 2nd. Head small, above shining green, the front part coarsely punctured, not so closely along the middle as in the lateral depressions; a space in front of the vertex impunctate, the vertex punctured, but the punctures almost absent from its middle. Thorax about as long as broad, a little rounded at the sides, scarcely at all narrowed behind, shining, brassy-green, coarsely punctured, the punctures sparing towards the margins; a space near the front angles quite impunctate. Elytra about $\frac{7}{8}$ lin. in length, scarcely so broad as long, greenish-brassy, more bluish at the sides and extremity, finely and sparingly punctured. Hind body entirely black; legs rather short.

Ega; a single female.

I am doubtful whether this will prove a distinct species from *T. quadrata* or not; it is a little smaller than *T. quadrata*, the head, thorax, and especially the elytra, are a little narrower; the antennæ are a little shorter and the front tarsi rather less dilated.

8. *Tænodema bella*, n. sp. Nigra, nitida, capite thoraceque viridi-cyaneis, elytris cyaneis, antennarum basi palpisque testaceis; prothorace disco plano, dense fortiter punctato; elytris parcius basi sat fortiter punc-

tatis, versus angulos externos posteriores fere lævigatis. Long. corp. $5\frac{1}{2}$ lin.

Antennæ slender, with joints 1 and 2 yellow, 3—7 black (the rest wanting); basal joint rather short, scarcely longer than the 3rd joint, this being hardly one and a half times the length of the 2nd joint. Palpi yellow; mandibles pitchy, reddish at the extremity. Head small, shining, bluish-green, densely and very coarsely punctured, bearing a few fine pale hairs; transverse space between the eyes smooth and shining. Thorax about $\frac{3}{4}$ lin in length, and about the same in breadth, slightly rounded at the sides, and slightly narrowed behind; the disc flattened and coarsely and densely punctured, the margins with only a few scattered punctures, this free space being largest on the front near the angles; the colour is shining bluish-green, like that of the head. Elytra about as long as the thorax, rather broader than long, shining blue, rather finely and sparingly punctured; the punctures rather coarser and closer at the suture behind the scutellum than elsewhere, becoming finer towards the extremity and sides, so as to be wanting at the hind angles. Hind body black and shining, sparingly punctured, the hind parts of the segments impunctate, the 6th and 7th only very finely punctured, the outstanding black setæ well marked. Legs short and stout, black, with the front tarsi pitchy above, pale beneath; under face of hind body more coarsely punctured than the upper.

Ega; a single female.

This species, though it greatly resembles, at first sight, *T. tarsalis* and the allied species, may be readily distinguished by the dense and regular sculpture of the thorax, the punctures being all large and crowded together on the middle, instead of being of unequal sizes and unevenly distributed.

9. *Tænodema cinerea*, n. sp. Elongata, nigra, capite, thorace, elytrisque minus distincte metallescentibus, antennarum basi postice obscure testaceo; pedibus piceis; cinereo-pubescens, prothorace spatio utrinque, elytris suturâ apiceque, abdomine segmentorum marginibus posterioribus lævibus. Long. corp. $7\frac{3}{4}$ lin.

Mas: abdomine segmento 7° ventrali apice paululum emarginato.

Antennæ $2\frac{1}{3}$ lin. in length, a little thickened towards

the extremity, pitchy black, with the two basal joints yellow behind; 3rd joint considerably shorter than 1st, and about twice as long as 2nd. Palpi pitchy, with the upper border of the last joint yellowish. Head coarsely punctured and clothed with an ashy pubescence, with a small space in front of the vertex smooth and shining. Thorax longer than broad, 1⅛ lin. in length, 1 lin. broad, straight at the sides and scarcely at all narrowed behind; very densely and coarsely punctured, clothed with an ashy pubescence, the punctures leaving the hind margin, and a well-defined space on each side at the front, free and smooth; the base in the middle has also a small longitudinal smooth space. Scutellum elongate and narrow, almost impunctate. Elytra slightly longer than thorax, about 1¼ lin. in length, coarsely punctured and clothed with an ashy pubescence, but with the hind margin, the suture, except at the base, and the humeral angles, smooth and free from pubescence. Hind body elongate, clothed with an ashy pubescence; the 5th, 6th and 7th segments nearly entirely covered, the 2nd, 3rd and 4th with the hind margins broadly free, the 7th and 8th at their extremities ferruginous; under side covered also with a pale pubescence, which is more scanty than on the upper side. Legs elongate, pitchy at the base; tibiæ black; front tarsi pitchy above, the hairs of their under surface white. The male has the hind margin of the ventral plate of the 7th segment broadly but slightly emarginate; in both sexes this plate is a little emarginate on each side, so that its lateral margin projects as a short tooth.

Ega; three specimens, 2 ♂, 1 ♀.

10. *Tænodema vicina*, n. sp. Elongata, nigra, capite, thorace, elytrisque cyanescentibus; palpis, pedibus, antennisque piceis, pedibus basi rufescentibus, antennis basi postice testaceo; cinereo-pubescens, prothorace spatio utrinque, elytris suturâ apiceque, abdomine segmentorum marginibus posterioribus lævibus. Long. corp. 7½ lin.

This species is excessively closely allied to *T. cinerea*; it has the antennæ distinctly shorter, viz., 1⅝ lin. in length, the front parts are more distinctly blue, the legs paler at the base and a little shorter, the punctuation of the thorax approaching more nearly to the hind margin.

Amazons; a single female without special locality.

11. *Tænodema similis*, n. sp. Elongata, nigra, antennis pedibusque basibus rufis; capite, thorace, elytrisque cyanescentibus; cinereo-pubescens, prothorace spatio utrinque, elytris suturâ apiceque et abdomine segmentorum marginibus posterioribus lævibus. Long. corp. 7 lin.

Antennæ about 2 lin. in length, scarcely thickened towards the extremity, pitchy, with the two basal joints yellow behind; 3rd joint much shorter than 1st, about one and a half times as long as 2nd. Palpi pitchy yellow, with the upper margin of the last joint yellow; mandibles pitchy, reddish at the apex. Head coarsely and densely punctured and clothed with a pale pubescence, a transverse space in front of the vertex smooth and shining. Thorax 1 lin. long and about ⅞ broad, very densely punctured, a small space on each side in front and the hind margin free (in a fresh specimen probably densely clothed with ashy pubescence). Elytra fully 1¹ lin. in length, densely punctured; the suture (except at the base) has a very narrow space free from punctures, and the hind margin is also free, but the punctures almost completely cover the extreme base and front angles (in fresh specimens the punctured parts probably covered with a dense pale-ashy pubescence). Hind body black; the segments punctured and pubescent, except on their apical portions; 8th segment and hind margin of 7th reddish. Legs pitchy, with the femora red.

In the male the hind margin of the ventral plate of the 7th segment is a little emarginate at the extremity.

Ega; a single male individual.

Very closely allied to *T. cinerea*, but narrower, with the thighs clear red, the front parts on the upper surface quite blue, and the thorax and elytra more evenly covered with punctures. The male has the ædeagus considerably longer than in *cinerea* and rounded at the extremity, whereas this is acuminate in *cinerea*. The single individual, which is all I possess for comparison, has the upper surface very rubbed, but I have no doubt, from the few hairs that remain, that in the fresh state the pubescence is very similar to that of *T. cinerea*.

12. *Tænodema rudis*, n. sp. Nigra, capite, thorace, elytrisque minus distincte metallescentibus; pedibus piceo-rufis, basi dilutioribus; antennarum basi testaceo, palpis piceo-testaceis, abdominis apice ferrugineo; cinereo-pubes-

cens, prothorace spatio utrinque, elytris apice suturâque apicem versus, abdomineque segmentorum marginibus posterioribus lævibus. Long. corp. 6½ lin.

Antennæ 1⅝ lin. long, distinctly thickened towards the extremity, pitchy, with the two basal joints yellow but infuscate in front; 3rd joint one and a half times as long as 2nd. Palpi pitchy yellow. Head coarsely punctured and with a pale pubescence, a small space in front of the vertex smooth and shining. Thorax 1 line (scarcely) in length, ⅝ lin. broad, coarsely and very densely punctured, with a space in front on each side smooth and shining; the hind margin also free from the dense punctuation, the surface bearing an ashy pubescence. Elytra 1⅛ lin. long, coarsely punctured, bearing a pale pubescence; the hind margin and the suture except at the base free. Hind body black, the segments punctured and pubescent except at their hind margins, the apex reddish. Legs, including the coxæ, reddish; the tibiæ infuscate.

Ega; a single female individual.

This species is again very closely allied to *T. cinerea*, but besides being considerably smaller, it has the legs shorter and paler, and the punctuation of the thorax and elytra a little coarser. The individual described is much rubbed, but I do not think the pubescence would differ materially in fresh individuals from that of *T. cinerea*.

13. *Tænodema filum*, n. sp. Elongata, perangusta, nigra, antennarum basi, palpisque rufis; capite thoraceque viridi-cyaneis, dense fortiter punctatis, illo spatio frontali lævi; elytris cyanescentibus, elongatis, fortiter minus crebre punctatis, punctis ad apicem fere nullis. Long. corp. 6 lin.

Antennæ long and slender, 1¼ lin. in length, pitchy black, the two basal joints reddish, the following ones pitchy red; 3rd joint not one and a half times the length of the 2nd, 10th much longer than broad. Mandibles reddish; palpi yellow. Head small, of a greenish metallic colour, very densely, very coarsely and regularly punctured, with fine, sparing, pale hairs, a space between the eyes smooth and shining; the surface is a little convex, the antennal depressions absent. Thorax ¾ lin. in length, and scarcely so broad, slightly rounded at the sides, evenly convex, coarsely and densely and deeply punctured; the punctures more sparing towards the sides, and especially

so at the base, which is shining, but there is no impunctate space on the front; the colour is similar to that of the head, but a little bluer. Elytra elongate, $1\frac{1}{8}$ lin. in length, slightly broader than the thorax, dark blue, shining, rather coarsely but sparingly punctured, the punctures disappearing at the outer hind angle. Hind body elongate and very narrow, shining black; the basal segments rather coarsely but not closely punctured, their hind margins impunctate; apical segments finely and sparingly punctured, hind margin of 7th obscurely reddish. Legs black, short; front tarsi dusky red above; under face of hind body more coarsely punctured than the upper.

St. Paulo; a single individual, which is apparently a female.

14. *Tænodema producta*, n. sp. Elongata, perangusta, nigra, antennis piceis, basi palpisque rufis; capite, thorace, elytrisque cyanescentibus, illis dense fortiter punctatis; elytris fortiter, minus crebre punctatis, punctis ad apicem fere nullis. Long. corp. 6 lin.

Very closely allied to *T. filum*, but without any smooth impunctate frontal space; it is even a little more slender, the thorax a trifle smaller, and the elytra a trifle shorter, but in other respects resembles almost exactly *T. filum*.

Amazons; a single specimen, without special locality. It is apparently a female.

15. *Tænodema laticornis*, n. sp. Parallela, nigra, antennarum basi, palpis, abdominisque apice rufis; capite thoraceque cyaneo-viridibus, dense fortiter æqualiter punctatis; elytris cyaneis, fortiter crebre punctatis. Long. corp. $5\frac{1}{2}$ lin.

Antennæ $\frac{7}{8}$ lin. in length, the two basal joints red, the rest nearly black; 1st joint scarcelylonger than 3rd; joints 4—10 differing little from one another in length, but each a little broader than its predecessor,—each of these joints is much broader at the extremity than at the base, they are broad and flat, the 10th broader than long; the 11th joint small, a good deal narrower than the 10th. Palpi yellow, mandibles small, each with a small, simple tooth in the middle, pitchy in colour. Head with the upper surface convex, the eyes small (in comparison with other species of the genus); the colour greenish-blue, the surface very densely punctured, and with fine grey hairs; a very

small, ill-defined space behind the middle, smooth and shining. Thorax ¾ lin. in length, and hardly so broad, not in the least curved at the sides, but a little narrowed behind; the whole surface covered with dense coarse punctures, a very narrow, longitudinal, smooth line along the middle; the colour is similar to that of the head, and it bears a scanty, pale pubescence. Scutellum short and broad, rounded at the extremity, punctured. Elytra about as long as the thorax, dark blue in colour, the punctuation rather coarse and moderately close, finer and more sparing towards the extremity. Hind body shining black, with the 8th segment and the hind margin of the 7th red; the connecting membrane of segments 2—5 white, but that between the 4th and 5th segments broadly infuscate in the middle; the segments are rather coarsely punctured. The legs are short and stout; the front and middle tarsi reddish, the front femora and tibiæ pitchy; the trochanters reddish, elsewhere nearly black.

Tapajos; a single specimen, apparently a female.

16. *Tænodema serpens*, n. sp. Nigra, capite, thorace, elytrisque plumbeis, fere opacis, dense fortiterque punctatis; antennarum basi, palpis, abdominisque apice rufis, pedibus anterioribus piceis. Long. corp. 4½ lin.

Mas: abdomine segmento 7° ventrali apice medio excisione semicirculari magnâ, basi rigide nigro-setoso.

Antennæ moderately long, distinctly thickened towards the extremity, blackish; 1st and 3rd joints short, of about equal lengths, 4—10 each a little broader than its predecessor, 10th about as long as broad. Palpi yellow; mandibles red. Head with the surface convex, faintly metallic, very densely punctured, bearing a pale, upright pubescence; a very narrow space above the middle, smooth and shining. Thorax rather longer than broad, almost straight at the sides and slightly narrowed behind, transversely convex; the whole surface very densely and coarsely punctured, bearing a pale, upright pubescence. Scutellum small, coarsely punctured. Elytra slightly longer than the thorax, closely and coarsely punctured, a little shining, with a pale, upright pubescence. Hind body black, reddish at the extremity, sparingly clothed with a pale pubescence, most distinct on the 7th segment; the four basal segments coarsely and closely punctured, the two following ones much more indistinctly. Front legs pitchy, with the

tarsi paler; middle legs darker than the front ones, but not black; hind legs black, with the trochanters pitchy: under face of hind body scarcely so closely and coarsely punctured as the upper.

The male has a broad and deep excision at the hind part of the ventral plate of the 7th segment of the hind body, the front portion being filled with coarse, black, straight setæ.

Ega; two individuals, ♂, ♀.

Allied to *T. laticornis*, but more slender, the antennæ not so broad; the front parts duller in colour, and the punctuation of the upper surface denser.

17. *Tœnodema tecta*, n. sp. Nigra, subdepressa, opaca, cinereo-pubescens, antennarum basi palpisque testaceis, pedibus piceis; dense punctata. Long. corp. 4 lin.

Mas: abdomine segmento 7° ventrali apice late, paulum profunde exciso, excisione rigide nigro-setosâ.

Antennæ $\frac{7}{8}$ lin. long, broad and flat, pubescent; two basal joints yellowish behind, infuscate in front, 4—10 each broader than its predecessor, the 10th much broader than long. Palpi yellow, the apical joint infuscate at the base; mandibles red. Head broad and short, its surface closely and rather coarsely punctured, with a conspicuous, upright, whitish pubescence. Thorax quadrate, about $\frac{5}{8}$ lin. long; the whole surface densely covered with moderately coarse punctures, and bearing a whitish pubescence. Elytra quadrate, flat, not longer than the thorax, rather densely punctured, sparingly clothed with white pubescence, which is replaced towards the extremity by a dark pubescence, the apical portion slightly shining. Hind body rather broad, black, coarsely and closely punctured, bearing a white pubescence, which is scanty on the basal segments, but dense and very conspicuous on the apical ones; the extreme apex obscure red, but the colour concealed by the pubescence. Under surface rather shining, the punctuation on the hind body rather coarse but not dense, the pubescence scanty. Legs pitchy, front tarsi paler, and only moderately dilated, hind tarsi elongate, nearly as long as the tibiæ.

In the male the ventral part of the 7th segment of the hind body has a broad but not deep notch at the extremity, the border of the notch being densely set with coarse, rigid, black setæ.

Ega; one specimen.

18. *Tænodema lurida*, n. sp. Nigra, supra opaca, dense punctata, cinereo-pubescens, antennarum basi palpisque rufis; pedibus piceis, anterioribus rufescentibus. Long. corp. 4 lin.

Antennæ thickened towards the extremity; the two basal joints yellow; the 3rd pitchy, the following ones nearly black, 10th strongly transverse. Palpi yellow, the basal portion of the last joint infuscate; mandibles red. Head very densely and coarsely punctured, bearing a pale pubescence; a narrow transverse space in front of the vertex, smooth and shining. Thorax transversely convex, about as long as broad, slightly rounded at the sides and slightly narrowed behind, coarsely and very densely punctured. Elytra slightly longer than the thorax, densely punctured; the suture and the basal portion bearing a pale pubescence, as also the inflexed side, but the larger portion of the hind part of each elytron with a fine dark pubescence. Hind body black, with the extremity pitchy red; the segments coarsely and closely punctured, the hind margins smooth and shining in the middle; the 6th and 7th segments more finely punctured than the basal ones; the basal segments are clothed with some fine white hairs, and these become more dense and distinct on the 6th and 7th segments, but the hind margin of this latter is quite smooth and shining. Anterior legs reddish, middle ones pitchy red, with the tibiæ darker; hind ones nearly black, with the trochanters red; under surface shining, hind body coarsely and evenly not densely punctured.

St. Paulo; a single individual, which I believe to be a female; the ventral plate of the 7th segment of the hind body is slightly elongate.

This species is closely allied to *T. tecta;* it is a little more slender and less depressed, the antennæ are slightly longer, the pale pubescence of the upper surface is less conspicuous, and is absent from a larger portion of the elytra.

## Pinophilus.

This genus, as at present understood, consists of about fifty species, inhabiting the warmer parts of the Old and New Worlds in about equal proportions: it is probable, however, that the species are really more numerous in the New World than in the Old; for while in Europe the genus is only represented by an eastern species that has

extended its habitat to the island of Sicily, in America, north of Mexico, several species occur, some of them, indeed, being apparently not uncommon there.

Mr. Bates has discovered a remarkably fine series of the genus, no less than twenty-four species being here described; of these *Pinophilus dux* is to be ranked amongst the largest of the *Staphylinidæ*, while other species are insignificant in size. One of the species, *P. mimus*, is remarkable from its great general resemblance to *Lathrobium opalescens*, the two species being, I believe, found living together.

As is also the case with some of the Amazonian species of *Lathrobium* and other genera, certain of the species here described bear the most complete resemblance to one another in their general characters, but are distinguished by well-marked external and internal sexual characters.

1. *Pinophilus dux*, n. sp. Robustus, niger, capite thoraceque nitidis, vage punctatis; elytris subnitidis, fortiter minus crebre punctatis, abdomine crebre sat fortiter punctato; antennis tarsisque obscure rufis. Long. corp. 14½ lin.

The largest and most powerful species of the genus, being considerably broader and slightly longer than *P. tenebrosus*. Antennæ rather short and stout, obscure reddish, the basal joints pitchy red. Head short and broad, shining black, sparingly and irregularly punctured; the punctures coarse, almost ocellated, and bearing fine setæ. Thorax just about as long as broad, a little narrowed behind, with all the angles rounded, shining black, coarsely and sparingly punctured, with punctures similar to those of the head, and irregularly distributed, a longitudinal irregular space along the middle being free from punctures; outside this an irregular double row of punctures, then a narrow very irregular space almost free from punctures, then a broad space at the sides with scattered punctures. Elytra slightly narrower than the thorax, and scarcely longer; rather coarsely and sparingly punctured, and very finely and sparingly pubescent. Hind body elongate and parallel; the segments rather coarsely and closely punctured and finely pubescent, the apical ones with the punctures coarser and more elongate than the others, but not rugose; the apex rather deeply emarginate.

Ega; a single female specimen.

This species appears to be closely allied to *P. torosus*, Er., a species which I know only by description. *P. dux* would seem to be larger than *torosus*, and it has not the apical segments of the hind body rugose; other details of Erichson's description of *P. torosus* do not seem very applicable to *P. dux*, so that if a comparison of the two species were made it is possible they might be found to differ in other minor points.

2. *Pinophilus ater*, n. sp. Niger, antennis, palpis, tarsis, abdominisque apice obscure rufis; capite thoraceque pernitidis, parce punctatis; thorace oblongo, dorso biseriatim punctato, præter punctos majores punctis minimis adsperso; elytris thorace vix longioribus, subnitidis, fortiter sat crebre punctatis; abdomine fortiter sat crebre punctato. Long. corp. 10 lin.

Elongate and parallel; antennæ nearly twice as long as the head, dull red; the basal joints stout, the 3rd joint distinctly longer than 2nd. Mandibles with a long tooth. Head shining black, with a few large punctures about the middle, and also some very minute punctures; the hind angles rather closely punctured. Thorax distinctly longer than broad, quite as broad as the elytra, quite straight at the sides, with the hind angles much rounded; very shining black, sparingly punctured, near the middle two irregular rows of punctures, and with some other scattered punctures about the sides and front, and the surface besides is sprinkled with very minute punctures. Elytra scarcely longer than the thorax, rather coarsely but not densely punctured. Hind body rather coarsely and closely punctured, its extremity reddish, truncate, and with a small spine on each side the truncation; the apical segments rather more sparingly punctured than the preceding ones. The legs are pitchy, with the tarsi reddish; the metasternum has a fine channel along the middle.

Tapajos; a single female specimen, from which the pubescence has been removed. This species is about the size of our *Oxypus ater*. It is larger and more parallel than the North American *P. picipes*, and differs therefrom by the large tooth of the mandibles.

3. *Pinophilus rectus*, n. sp. Elongatus, parallelus, niger, antennis, palpis, pedibusque rufis; capite thoraceque nitidis, hoc oblongo, crebre irregulariter punctato, lineâ

mediâ angustâ lævi; elytris crebre fortiter punctatis; abdominis apice breviter bispinoso. Long. corp. 8 lin.

Mas: femoribus posterioribus subtus medio dente acuto.

Fem.: femoribus muticis.

Antennæ nearly as long as head and thorax, red. Mandibles with an elongate tooth. Head slightly narrower than thorax, shining, the upper surface coarsely but sparingly punctured, except at the hind angles, where the punctuation is dense and rugose; it has also a few very fine punctures. Thorax as broad as the elytra, elongate and parallel, longer than broad, quite straight at the sides, moderately coarsely punctured, shining, the punctures irregularly distributed, leaving a narrow space along the middle smooth; outside this a space where the punctures are crowded together, then again an ill-defined space, most distinct towards the front, free from punctures, the sides again more closely punctured especially on the hinder part. Elytra oblong, quite as long as the thorax, rather coarsely and closely punctured. Hind body closely and rather coarsely punctured, generally reddish at the extremity; the apex of the upper terminal plate is not truncate, but a little rounded or produced in the middle, with a short spine on each side. Legs clear red.

In the male the trochanters of the hind legs are acuminate at the extremity, and the thighs are armed in the middle beneath with a sharp tooth; the 6th ventral segment is depressed in the middle towards the extremity, the hind margin narrowly emarginate; the 7th segment has a rather broad and deep emargination at the extremity, in front of which it is flattened or depressed.

Santarem and Ega. The specimen from Ega has the extremity of the hind body concolorous, whereas it is reddish in the specimens from Tapajos.

4. *Pinophilus æqualis*, n. sp. Nigricans, antennis, palpis, pedibusque ferrugineis, capite thoraceque nitidis, illo vertice dense punctato; thorace oblongo, crebre minus fortiter punctato, lineâ mediâ angustâ lævi; elytris opacis, dense subtiliter rugoso-punctatis; abdomine crebrius minus fortiter punctato, apice unispinoso. Long. corp. $7\frac{1}{2}$ lin.

Mas: abdomine segmento 7° ventrali medio profunde emarginato.

Antennæ obscure red, slender, as long as head and

thorax; 3rd joint distinctly longer than the elongate 2nd joint. Head distinctly narrower than the thorax, with two coarse punctures in the middle immediately behind the labrum; on each side the middle near the front with a patch of about a dozen coarse punctures, the front part shining and with some scattered minute punctures; the vertex and inner margin of the eyes densely and coarsely punctured and not shining. Thorax slightly longer than broad, straight at the sides, and only very slightly narrowed towards the base; rather shining, closely but not coarsely punctured, with a very narrow line along the middle smooth; also with a small smooth space near the front angles, and a second just behind it. Elytra about as long as the thorax, and scarcely broader, with a very dense moderately fine punctuation, quite dull. Hind body quite dull, rather densely pubescent, closely and rather finely and indistinctly punctured; its extremity obscure red, terminated in each sex by a short point or spine. Legs obscure reddish.

In the male the ventral plate of the 7th segment has in the middle a rather deep notch, which is broad at the opening, narrow and rounded at the summit.

My specimens of this species bear no other locality than "Amazons."

5. *Pinophilus mimus*, n. sp. Parallelus, piceus, capite thoraceque nitidis, illo vertice parce punctato; thorace quadrato, subtiliter crebre punctato, lineâ mediâ angustâ, minus discretâ, lævi; elytris crebre sat fortiter punctatis, vix nitidis; abdomine opaco, fusco-pubescente, minus dense punctato, apice rufo; antennis, palpis, pedibusque rufis; abdomine segmento 5° ventrali apicem versus lineâ transversâ impressâ. Long. corp. 5½—6 lin.

Mas: segmento 7° ventrali apice medio emarginato, emarginatione anterius angustâ.

Antennæ red, very slender, elongate, quite as long as head and thorax; 3rd joint considerably longer than 2nd. Head small, shining, with a purplish reflection, the front part very sparingly punctured; the vertex sparingly but distinctly punctured, the punctures not coarse. Thorax quadrate, similar in colour to the head, evenly, rather sparingly and finely punctured, with an indistinct line along the middle, and a small space near the front angles, impunctate; the surface is very shining, the pubescence

being very fine and scanty. Elytra slightly longer than the thorax, evenly, rather closely, and moderately finely punctured. Hind body quite dull, with a long and distinct pubescence; its punctuation moderately coarse, but indistinct and not dense, the extremity red, the hind margin simply rounded; the 5th segment on the underside is impressed near the extremity with a not very distinct transverse line. Legs red.

The male has a rather deep notch, the anterior part of which is very narrow in the middle of the hind margin of the 7th ventral segment.

Tapajos; several specimens.

6. *Pinophilus modestus*, n. sp. Parallelus, piceus, capite thoraceque pernitidis, illo parce punctato; thorace oblongo, sat crebre subtiliter punctato, lineâ mediâ, minus discretâ, lævi; elytris sat crebre fortiter punctatis, subnitidis; antennis pedibusque rufis. Long. corp. 7½ lin.

Antennæ red, slender and elongate, quite as long as head and thorax; 3rd joint one and a half times the length of 2nd. Head almost as broad as thorax, very shining, the upper surface with a few coarse punctures, most numerous about the hind angles, but nearly wanting in the middle of the vertex. Thorax oblong, longer than broad, quite straight at the sides, shining, rather finely and not densely punctured, the punctures leaving an irregular space along the middle, and a round space near the front angles, impunctate. Elytra slightly longer than thorax, rather coarsely and not densely punctured. Hind body not densely punctured, reddish at the extremity.

Ega; a single female.

This species, though closely allied to *P. mimus*, is abundantly distinct by its larger size, more elongate thorax, and the more sparingly punctured front parts of the upper surface; the extremity of the hind body is simple, as in *P. mimus*, but I have not ascertained whether the 5th segment bears a transverse line or not.

7. *Pinophilus tenuis*, n. sp. Angustulus, parallelus; capite thoraceque pernitidis, fere impunctatis; rufescens, capite, elytris, abdomineque obscurioribus, hoc longius pubescente, minus distincte punctato. Long. corp. 4 lin.; lat. prothoracis vix ultra ½ lin.

Mas: abdomine segmento 7° ventrali apice obsolete emarginato.

Antennæ red, scarcely so long as head and thorax, rather stout, not thinner at the extremity; 3rd joint a little longer than 2nd. Head small, shining, dark reddish, with a very few punctures. Thorax longer than broad, about as broad as the elytra, quite straight at the sides, shining red, with a few fine punctures, viz., four distant ones in a row on each side of the middle, and five or six on each side near the margin. Elytra a little longer than the thorax, infuscate, rather finely and sparingly punctured, but slightly shining. Hind body dull, infuscate, reddish at the extremity, the punctuation indistinct, moderately close. Legs yellowish-red; extremity of hind body simply rounded.

The male has only a very shallow notch at the extremity of the ventral plate of the 7th segment of the hind body.

8. *Pinophilus distans*, n. sp. Niger, fere opacus, antennis, palpis, pedibusque testaceis, abdomine apice rufo; vertice dense punctato; thorace oblongo, elytrisque dense minus fortiter punctatis. Long. corp. $6\frac{1}{2}$ lin.

Mas: abdomine segmento 7° ventrali fere simplice, apice obsolete emarginato.

Antennæ yellow, slender, moderately long; 3rd joint a little longer than 2nd. Palpi pale yellow; mandibles pitchy. Head with the vertex densely punctured; in front of this with a transverse, quite shining space, the anterior part with coarse punctures on each side, and two moderately large punctures on the front edge of the clypeus in the middle. Thorax one-fourth longer than broad, quite straight at the sides, densely, moderately coarsely and evenly punctured, the punctures covering the whole surface and leaving no smooth spaces. Elytra scarcely longer than the thorax; their punctuation very similar to that of the thorax, their hind margin obscurely red. Hind body moderately coarsely and not closely punctured, the extremity broadly red. The legs are pale yellow; the anterior tarsi extremely broad.

The male has the ventral plate of the 7th segment almost simple; it is not produced, and only very obsoletely emarginate at the extremity; the ventral plate of the 8th segment is visible and rather broad, and remains part of the sheath, it not being modified to form part of the intromittent organ; the form of the latter is very peculiar.

Amazons; a single male individual, without more special

locality; the species appears allied to *P. javanus*, Er., and its Indian allies, rather than to the other Austro-Columbian species; this makes me think it possible there may be an error in the indication of its locality.

9. *Pinophilus incultus*, n. sp. Niger, omnino opacus, antennis, palpis, pedibusque pallidis; thorace quadrato, obsoletissime punctato; elytris creberrime sat fortiter ruguloso-punctatis. Long. corp. 4½ lin.

Mas: abdomine segmento 7° ventrali apice medio emarginato.

Antennæ yellow, very slender, 3rd joint about as long as 2nd. Head short, black, mandibles and front of clypeus pitchy red, dull, the front part with large distant punctures, the vertex on each side coarsely but obsoletely punctured. Thorax not quite so long as broad, slightly narrowed behind, very dull, sparingly and extremely obsoletely punctured; in the middle in front of the base with a short, very obscure, longitudinal elevation. Elytra a little longer than the thorax, quite dull, densely punctured; the punctures moderately coarse, the interstices rugulose. Hind body narrow, quite dull, indistinctly punctured, the punctuation obscured by a coarse pubescence. Legs pale yellow, with the coxæ dusky reddish, the front tarsi very broad.

In the male there is a small but distinct notch at the extremity of the ventral plate of the 7th segment of the hind body; the ventral plate of the 8th segment is enfolded by the dorsal plate; it is narrowed towards the extremity, and furnished there with two small hooks placed at right angles to the rest of the plate; in the female this plate is broader and visible, and has a triangular notch at the extremity.

Tapajos; several specimens; one immature specimen is quite pale brown; I have also a male specimen from Ega which differs only in being broader and a little more depressed.

10. *Pinophilus proximus*, n. sp. Niger, opacus, antennis, palpis, pedibusque pallidis; thorace quadrato, parce obsolete punctato; elytris dense fortiter ruguloso-punctatis, subopacis. Long. corp. 4½ lin.

This species differs from *P. incultus* only by some details of punctuation; the thorax is rather more distinctly

punctured, the elytra more coarsely and less densely punctured and not so dull. The male has the 7th segment formed as in *P. incultus*, but the notch is narrower in *P. proximus*.

Tapajos; two specimens, one of which is brown, being immature.

11. *Pinophilus angustus*, n. sp. Niger, antennis, palpis, pedibusque pallidis; thorace quadrato, æquali, opaco, parcius obsolete punctato; elytris opacis, fortiter crebre punctatis. Long. corp. 4½ lin.

Narrow; antennæ yellow, slender, moderately long, 3rd joint a little longer than 2nd. Palpi yellow; mandibles, front edge of clypeus and antennal tubercles pitchy. Head dull, front part with sparing coarse punctures, punctuation of the vertex obsolete. Thorax quite as long as broad, quite straight at the sides, not narrowed behind, quite as broad as the elytra; its surface dull, sprinkled with distinct, though very slightly impressed, moderately fine punctures. Elytra slightly longer than the thorax, dull, rather coarsely and moderately closely punctured, the interstices larger than the punctures. Hind body rather slender, its punctuation indistinct, rather coarse, but shallow and not dense, concealed by a coarse pubescence. The legs are pale yellow, with the coxæ reddish; the anterior tarsi very broad.

Tapajos; two specimens, both females; the extremity of the hind body is formed as in *P. incultus* ♀, to which species, as well as to *P. proximus*, the present species is closely allied, but it may readily be distinguished by its more slender form and more sparingly punctured elytra.

12. *Pinophilus oblatus*, n. sp. Elongatus, niger, opacus, antennis gracillimis, palpis pedibusque pallidis; thorace quadrato, obsoletissime punctato; elytris peropacis, dense ruguloso-punctatis; abdomine apicem versus minus discrete rufescente. Long. corp. 6 lin.

Mas: abdomine segmento 7° ventrali dimidio apicali lævi, apice truncato, haud emarginato.

Antennæ very slender, very elongate, the incrassation at the extremity of each joint less than in the other species; 3rd joint slightly longer than 2nd; 8th joint about as long as 3rd (the three apical joints are wanting in the individual described). Head small, dull, with the excep-

tion of the front part of the clypeus, which is shining and not so black as the posterior parts; the front part with some coarse punctures, the middle part without punctuation, the vertex with obsolete but rugose and dense punctuation. Thorax quadrate, scarcely longer than broad, straight at the sides; its surface quite dull, and with a very obsolete punctuation. Elytra a little longer than the thorax, quite dull, closely and moderately coarsely, rugosely punctured. Hind body moderately coarsely and closely punctured, the extremity obscurely reddish. Legs yellow, with the tibiæ slightly infuscate.

Ega; a single male specimen. The apical portion of the 7th ventral segment is smooth, being quite free from punctuation or pubescence, and shows no trace of emargination; the ventral plate of the 8th segment is enfolded and concealed by the dorsal plate; it is elongate and slender (when dissected out), its basal portion only slightly broader than the apical half, and it is furnished at the apex with a small curved appendage.

13. *Pinophilus extremus*, n. sp. Niger, opacus, antennis, palpis, pedibusque pallidis; capite anterius rufescente; thorace oblongo, basin versus angustato, crebre sat fortiter sed minus profunde punctato; elytris omnino opacis, profunde sat fortiter et crebre ruguloso-punctatis; abdomine apicem versus rufescente. Long. corp. 6 lin.

Mas: abdomine segmento 7° ventrali apicem versus parcius punctato, apice ipso rotundato.

Antennæ slender, moderately long; 3rd joint distinctly longer than 2nd. Head with the front part red, covered with a very dense and fine punctuation, which becomes more sparing towards the front, so that it is there shining; also with some coarse punctures on each side in front of the middle, and with the vertex coarsely but not deeply punctured. Thorax about as long as broad, distinctly narrowed behind, dull, coriaceous, and with rather coarse but only little impressed punctures, which are rather more distinct about the middle than elsewhere; there is no definite longitudinal space free from these punctures, but just in front of the base is a small, shining, longitudinal elevation. The elytra are slightly longer than the thorax, quite dull black, obscurely reddish at the extremity, covered with a rather deep, but only moderately coarse and close punctuation. Hind body reddish towards the extremity.

In the male the 7th ventral plate is broad and rounded at the extremity, towards which part the punctures become more sparing, so that at the apex, in the middle, they are quite wanting; the ventral plate of the 8th segment forms a deep, elongate trough, terminated at its extremity by a curved, elongate spine.

Tapajos; only one individual.

14. *Pinophilus sulcatus*, n. sp. Niger, parallelus; thorace bisulcato, grosse punctato, interstitiis nitidis; elytris dense fortiter punctatis, fere opacis; antennis gracillimis, elongatis, rufescentibus, basi cum pedibus palpisque pallide testaceis. Long. corp. 8 lin.

Mas: abdomine segmento 7° ventrali sat producto, apice lato, sat profunde latius emarginato.

Antennæ rather longer than head and thorax, extremely slender; 3rd joint distinctly longer than 2nd, basal joint pale yellow, the rest rather dark. Head shining in front, opaque behind, the back part coriaceous, and the hinder angles with obsolete, very coarse punctuation; the front part with sparse, fine punctures, with two coarse ones in the middle, immediately behind the labrum, and with four or five other large punctures obliquely placed on each side, near the front. Thorax about one-fourth longer than broad, a little narrowed behind, with extremely coarse, shallow punctures; the interstices very shining, the punctures opaque, being coriaceous; along the middle with two broad, longitudinal impressions, rather deep behind, indistinct towards the front; in these impressions the punctures are confluent; small spaces near the front and hind angles are free from punctures. Elytra hardly longer than the thorax, coarsely and closely rugosely punctured. Hind body dull, rather closely, moderately finely punctured. Legs pale yellow, coxæ pitchy.

In the ♂ the under part of the 7th segment of the hind body is produced into a short, broad plate, the extremity of which is occupied by a broad and rather deep notch; the ventral plate of the 8th segment forms a trough, furnished at the extremity with a very short projection.

Ega; three individuals, one ♂, two ♀.

15. *Pinophilus duplex*, n. sp. Niger, parallelus, thorace bisulcato, grosse punctato, interstitiis nitidis; elytris dense fortiter punctatis, fere opacis; antennis gracillimis,

elongatis, rufescentibus, basi cum pedibus palpisque pallide testaceis. Long. corp. 8 lin.

Mas: abdomine segmento 7° ventrali longius producto, apice angusto, parum emarginato.

This species resembles extremely the *P. bisulcatus*, but differs by its male characters. In other respects it may be said to resemble that species exactly; the single specimen I have seen exhibits some slight differences in sculpture, the punctuation of the upper surface being a little coarser; this is more notable on the thorax than elsewhere, so that the coarse punctures are more confluent, and the shining interstices more reduced in extent.

I have no more special locality for this species than "Amazons," but I suspect it to be from the upper portion of the river.

16. *Pinophilus laxus*, n. sp. Niger, nitidus, antennis, palpis, pedibusque testaceis, geniculis nigris; thorace basin versus angustato, crebre fortiter punctato; elytris fortiter punctatis; antennis elongatis, tenuibus, articulo ultimo præcedente paulo longiore. Long. corp. 7 lin.

Mas: antennis articulo ultimo magis elongato; abdomine segmento 7° ventrali elongato, apice angusto, obsolete emarginato.

Antennæ slender and elongate, yellow; 3rd joint one and a half times as long as 2nd. Mandibles pitchy, with a long tooth; palpi pale yellow. Head black, shining, except at the hind angles, with a few punctures immediately behind the labrum; the middle part with a patch of coarse distant punctures, and the vertex with sparing coarse punctures. Thorax about as long as broad; the sides a little rounded, and distinctly narrowed behind; transversely convex, black and shining, rather coarsely and closely punctured; the punctures not so close in the middle at the base, and leaving also the hind angles, and a small space near the front angles, free. Elytra ample, fully one-third longer than the thorax, rather coarsely but not closely punctured, shining black; the pubescence fine, sparing and very easily removed. Hind body rather slender, sparingly punctured, but only slightly shining. Legs rather long and stout, pale yellow, with the knees infuscate.

The male has the 7th ventral segment produced, narrow

and a little emarginate, shining and impunctate towards the extremity.

Ega, a single specimen; also without special locality two other specimens, male and female, which I suspect represent a closely allied species, but may perhaps be a variety of this species; they have the thorax more sparingly punctured, and the male has the antennæ with the joints a little differently shaped, but this may possibly depend on a slight shrivelling of these delicate structures. *P. palmatus*, Er., is evidently a closely allied species.

17. *Pinophilus aberrans*, n. sp. Niger, nitidus, antennis, palpis, pedibusque testaceis; thorace elytrisque crebre fortiter punctatis; antennis articulo ultimo præcedenti longiore. Long. corp. 6—6½ lin.

Mas: antennarum articulo ultimo valde elongato; abdomine segmento 7° ventrali producto, apice angusto, obsolete emarginato.

Antennæ yellow, rather slender; 3rd joint distinctly longer than 2nd. Palpi pale yellow; mandibles pitchy. Head shining black, with two or three coarse punctures immediately behind the labrum, then a small impunctate space, then across the middle a space with coarse punctures, behind this another impunctate space; the vertex on each side punctured, the hind angles dull. Thorax about as long as broad; the sides nearly straight, and not narrowed till near the hind angles, when they become much narrowed, so that the base is a good deal narrower than the front; transversely convex, rather coarsely and moderately closely punctured, the punctures wanting on a small space near the front angles, and at the hind angles, and sometimes more sparing along the middle. Elytra fully one-third longer than thorax, rather coarsely but not closely punctured. Hind body rather slender, sparingly punctured. Legs pale yellow.

In the male the terminal joint of the antennæ is nearly as long as the three preceding joints together; the ventral plate of the 7th segment is produced and narrowed at the extremity, where it is scarcely emarginate; the apical portion is smooth and impunctate. In the female the last joint of the antennæ is only about one and a half times the length of the 10th joint.

Ega; one ♂, four ♀ individuals.

This species presents a very great resemblance to *P. laxus*, yet the structure of the male intromittent organ is very different.

18. *Pinophilus bicolor*, n. sp. Nitidus, rufus, capite abdomineque nigris, antennis, palpis, pedibusque testaceis; thorace basin versus angustato, cum elytris fortiter parcius punctato. Long. corp. 4½—5 lin.

Mas: abdomine segmento 7° ventrali producto, apice lævi, truncato.

Antennæ slender, moderately long, yellow; 3rd joint about as long as 2nd. Palpi pale yellow; mandibles reddish. Head rather small, black and shining, the vertex coarsely punctured, in front of this a very shining space, the front part with a few coarse punctures, and with some fine ones scattered. Thorax shining red, about as long as broad, slightly rounded at the sides and distinctly narrowed behind, with coarse scattered punctures, wanting on a small space near the front angles and about the hind angles, and not so dense along the middle. Elytra shining red, elongate, deeply and rather coarsely but sparingly punctured. Hind body black, rather coarsely but not closely punctured. Legs short, pale yellow, the coxæ red.

In the male the ventral plate of the 7th segment of hind body is produced; the extremity is truncate, not in the least emarginate, the apical part shining and impunctate; the ventral plate of the 8th segment forms part of the intromittent organ, and is bihamate at the extremity.

Ega; four individuals, two ♂, two ♀.

19. *Pinophilus Batesi*, n. sp. Nitidus, rufus, capite abdomineque apice nigris, thorace piceo-rufo, antennis, palpis, pedibusque pallidis; thorace elytrisque fortiter sat crebre punctatis. Long. corp. 5½ lin.

Mas: abdomine segmento 7° ventrali producto, apice angusto, simplice.

Antennæ slender, moderately long; 3rd joint considerably longer than 2nd; the basal joint pale yellow, the rest rather darker. Palpi pale yellow; mandibles and labrum red. Head shining black, vertex coarsely punctured, clypeus with two large punctures on its front edge in the middle; in front of the eyes a transverse curved patch of ten or a dozen coarse punctures, behind these a very smooth and shining space. Thorax as long as broad,

slightly rounded at the sides and a little narrowed behind, red suffused with black, the base being more distinctly red than the other parts; coarsely irregularly and not densely punctured, the punctures leaving a space near the front angles free; in the middle in front of the base the surface is indistinctly elevated, this part also being free from punctures. Elytra one and a third times the length of the thorax, shining red, rather coarsely and sparingly punctured. Hind body red, the two apical segments suffused with black, rather sparingly punctured. Legs pale yellow, with the coxæ red.

In the male the ventral plate of the 7th segment is much produced and narrow at the extremity, the apical portion quite impunctate and shining; the ventral plate of the 8th segment forms part of the intromittent organ; it is elongate and narrow, and furnished at the extremity with two very long processes, which are quite half the length of the rest of the plate.

Tapajos; a single male.

This species bears a very great resemblance to *P. bicolor*, but may be distinguished by the colour of the thorax and hind body; it is remarkable that, though from the external characters the two insects might almost be supposed conspecific, yet the structure of the intromittent organ of the male is extremely different.

20. *Pinophilus debilis*, n. sp. Subdepressus, piceus, capite thoraceque dilutioribus; nitidus, antennis, palpis, pedibusque pallide flavis; thoraceque quadrato, crebre fortiter punctato; elytris crebre profunde punctatis. Long. corp. $3\frac{1}{4}$—$3\frac{1}{2}$ lin.

Mas: abdomine segmento 7° ventrali medio producto, apice angusto, rotundato-acuminato.

Antennæ yellow; 3rd joint shorter than 2nd. Palpi pale yellow. Head pitchy red, shining, with two punctures in the middle behind the labrum; behind these four or five on each side in an irregular longitudinal row, and with some others close to the inner margin of the eye and the vertex, the smooth parts with a few distant extremely fine punctures. Thorax about as long as broad, straight at the sides and not narrowed behind, shining, coarsely punctured, with a space near the front angles free; with no distinct impunctate longitudinal line along the middle, but with the part in front of the base in the middle slightly

elevated. Elytra slightly longer than the thorax, deeply, rather coarsely, not densely punctured, the interstices shining. Hind body parallel, the margins of the segments slightly paler, clothed with a fine, rather dense pubescence, rather closely and finely punctured. Legs pale yellow; anterior tarsi very broad.

In the male the ventral plate of the 7th segment is produced, its extremity narrow, the apical portion is pale, smooth and shining; the ventral plate of the 8th segment forms part of the intromittent organ, and is very deeply grooved, its extremity without appendages.

Tapajos; several specimens.

21. *Pinophilus minor*, n. sp. Angustulus, rufescens, nitidulus, antennis, palpis, pedibusque pallidis; thorace oblongo, basin versus leviter angustato, fortiter sat crebre punctato; elytris fortiter profundeque punctatis. Long. corp. 3 lin.

Mas: abdomine segmento 7° ventrali producto, apice obsolete emarginato.

Fem.: abdomine segmento 7° ventrali apice medio incisurâ parvâ.

Antennæ yellow, short; 3rd joint rather shorter than 2nd. Palpi pale yellow; last joint elongate and slender. Head shining, reddish, paler towards the front, with two punctures in the middle in front; behind these with four or five on each side, with two or three along the inner margin of the eyes, and a few at the extreme vertex, elsewhere quite smooth and shining. Thorax scarcely longer than broad, straight at the sides but a little narrowed behind, obscurely reddish, very shining, coarsely but not densely punctured, the punctures wanting towards the front angles; a shining slightly elevated longitudinal space in front of the base in the middle. Elytra a little longer than the thorax, reddish, rather darker at the base, deeply and coarsely punctured, the interstices shining. Hind body slender, the basal segments opaque in front and shining at the hind edge; the apical segments sparingly punctured and rather shining. Legs almost white.

In the male the ventral plate of the 7th segment is produced, the apex of the produced part moderately broad and slightly emarginate; the plate of the 8th segment forms part of the intromittent organ, its extremity forms a sharp spine slightly curved upwards.

In the female there is a small but very sharply defined notch in the middle of the extremity of the ventral plate of the 7th segment; the plate of the 8th segment is rather broad, its extremity emarginate so as to be acuminate on each side.

Tapajos; four specimens, one ♂, three ♀.

Closely allied to *P. debilis*, but narrower and paler, with the thorax more coarsely punctured and the sexual characters different in both sexes.

22. *Pinophilus affinis*, n. sp. Nigricans, nitidus, antennis, palpis, pedibusque flavis; thorace quadrato, basin versus leviter angustato, fortiter punctato; elytris crebre profunde punctatis. Long. corp. 3½ lin.

Mas latet.

Antennæ yellow, short; 3rd joint rather shorter than 2nd. Head black, with the mandibles and edge of the clypeus reddish, punctured as in *P. debilis*, but with the fine sparing punctures less distinct. Thorax about as long as broad, slightly narrowed behind, pitchy black, shining, coarsely punctured, the punctures wanting on a small space near the front angles; in the middle, in front of the base, slightly elevated, the punctures leaving this part free. Elytra about one-third longer than the thorax, shining, blackish, with the hind margin pitchy red, deeply and rather coarsely and closely punctured. Hind body blackish, with the margins of the segments pitchy, rather closely and finely punctured. Legs pale yellow.

The female has the extremity of the ventral plate of the 7th segment simple, that of the 8th formed as in *P. minor*.

St. Paulo; a single specimen.

Though very closely allied to *P. debilis*, I have no doubt this is a distinct species; the thorax is more coarsely punctured, and slightly narrowed behind; the last joint of the maxillary palpi a little shorter, the legs a little longer; the male would probably offer good distinctive characters.

23. *Pinophilus egens*, n. sp. Rufo-castaneus, nitidulus, abdomine segmentis duobus ultimis dorso infuscatis, antennis geniculatis, palpis pedibusque albidis; thorace biseriatim punctato; elytris fortiter punctatis. Long. corp. 3½ lin.

Mas: tibiis anterioribus mucronatis, abdomine segmento 7° ventrali subproducto, medio obtuso.

Narrow, subcylindric. Antennæ short, geniculate; the basal joint as long as the three or four following joints together, 2nd twice as long as 3rd, 7—10 similar to one another, bead-like. Palpi yellow, long, the apical joint slender and elongate. Head shining, rather paler than the other parts; pale yellow, with a single obscure puncture on the front edge of the clypeus, with a distinct impression on each side, inside the antennal tubercle, in which are two punctures; behind these with two other punctures, and two or three punctures on each side at the extreme back part; the temporal angles less developed than in the other species of the genus. Thorax transversely convex, slightly curved at the sides, a little narrowed behind, a good deal longer than broad; on each side with a row of four or five punctures along the middle, and outside these three or four other punctures on each side. Elytra longer than the thorax, reddish, shining, coarsely, moderately closely punctured. Hind body reddish, with the 6th and 7th segments infuscate in the middle, and their hind margins very pale; the segments are rather closely punctured, but shining. The legs are white; the front tarsi very broad, the hinder ones slender and elongate.

In the male the front tibiæ are furnished at the extremity (or perhaps the tarsi at the base) with a stout process, which projects inwards, and is broader at the apex than the base; the ventral plate of the 7th segment is slightly produced in the middle, that of the 8th segment is internal; the sides of the dorsal plate greatly overlapping one the other at the base.

Tapajos; two specimens.

This is a very curious species, and will probably form a distinct genus.

24. *Pinophilus abax*, n. sp. Capite thoraceque nigerrimis, pernitidis; elytris rufis, grosse punctatis; abdomine opaco, nigro, nigro-pubescente, segmentis basalibus lateribus cinereo-pubescentibus, segmento 7° pallido, medio nigro-maculato; antennis, palpis, pedibusque albidis. Long. corp. $5\frac{1}{4}$ lin.

Mas: abdomine segmento 7° ventrali valde producto.

Antennæ geniculate, white; 1st joint as long as the three or four following joints together; 2nd joint a little longer than the 3rd, which is almost equal to the 4th; joints 4—11 slender, each a little shorter than its prede-

cessor, each distinctly longer than broad. Palpi elongate, white, the terminal joint slender and elongate. Head much smaller than the thorax, very shining black; the mandibles red; the antennal tubercles reddish; a single fine puncture on the front margin of the clypeus, a depression inside the tubercles, and behind this two punctures on each side, and a few punctures on each side of the vertex. Thorax very shining, black, about as long as broad, transversely convex, not narrowed behind, with an irregular row of four or five coarse punctures on each side the middle; with four or five others outside these, some fine punctures on the front margin, and with a few fine obsolete punctures scattered over the surface. Scutellum black, not punctured. Elytra slightly longer than the thorax, shining red, deeply and very coarsely punctured, the punctures not dense. Hind body short, opaque, the segments obscurely punctured, the three or four basal ones with ashy pubescence on each side; the 7th segment white, with a black patch on the middle. Legs rather stout, white. The sternum, with the coxæ and under face of hind body, reddish.

In the male the ventral plate of the 7th segment has the middle part greatly produced, so as to form a large tongue-like process; it is separated by a deep notch from the lateral portion, and is finely punctured in the middle; that of the 8th segment forms part of the intromittent organ; it is polished and quite smooth, from beyond the middle gradually narrowed to the extremity, where it forms a sharp spine.

Amazons; a single male, without special locality.

This very remarkable species is allied to the *P. egens*, though extremely different from it in appearance. I should suppose the Columbian *P. crassicollis*, Er., may be an allied species.

### Œdodactylus.

The two species here described are only referred with doubt to the genus *Œdodactylus*, hitherto represented only by *Œ. fuscobrunneus*, from Chili. They are remarkable by the elongate anterior coxæ, and the great development of the side pieces of the thorax, and may be considered the Austro-Columbian representatives of the Arctogæal and Australian *Procirrus*, to which genus the Chilian species approaches in facies more nearly than do

the two Amazonian insects. These, moreover, are discordant in appearance inter se; the sculpture and some of the details of *Œ. anceps* recalling *Sunius*, and I think it quite possible that a real affinity in that direction will be detected. The genus *Procirrus* is one of the most remarkable of the *Staphylinidæ*, from the fact that the very elongate front coxæ are entirely exserted, there being only a small circular opening at the extreme front angle of the thorax for their insertion. This peculiarity appears to result from an unusual and extreme development of the ento-thorax, and from certain parts thereof, that are usually membranous, becoming horny. Certain other members of the *Pinophilini* (*Pinophilus latipes*, e. g.) offer us the existing intermediate stages of this transformation; and it appears to me probable that the gradations of metamorphosis of this part will offer the most important clue to the classification of the members of the group.

1. *Œdodactylus errans*, n. sp. Rufo-brunneus, antennis pedibusque testaceis; dense punctatus, thorace elongato, subnitido; antennis brevioribus. Long. corp. $2\frac{3}{4}$ lin.

Mas: abdomine segmento 7° ventrali ante apicem lævi, margine posteriore late emarginato; segmento octo processubus duobus deorsum curvatis.

Antennæ quite yellow, short, moderately stout; 3rd joint considerably shorter than 2nd, the apical joints scarcely longer than broad, the 11th truncate. Maxillary palpi yellow, the last joint large, securiform. Head small, narrower than the thorax, closely punctured, a little shining, especially along the middle. Thorax rather long and narrow, narrower than the elytra, narrowed towards the base, closely and moderately coarsely punctured, a little shining; a narrow longitudinal space in front of the base in the middle obscurely continued forwards, shining. Scutellum very small. Elytra at the sides about as long as the thorax; a little emarginate at the extremity, so that along the suture they are shorter than the thorax; densely and deeply, rather coarsely punctured, the very narrow interstices shining. Hind body quite cylindric, each segment narrower at base than at the extremity; rather closely punctured, with elongate pubescence; the apical

segments less closely punctured towards their hind margins, so as to be a little shining.

Tapajos; a single individual.

2. *Œdodactylus anceps*, n. sp. Brunneus, opacus, dense punctatus; thorace minus elongato, basi rotundato, antennis pedibusque testaceis. Long. corp. 2¾ lin.

Antennæ yellow, moderately long, slender; 2nd joint longer than the very slender 3rd joint; joints 4—11 each very slender at the base, and longer than broad. Maxillary palpi yellow, last joint less produced inwardly than in *Œ. errans*. Head small, narrower than the thorax, closely and rather coarsely but not deeply punctured, the interstices slightly shining. Thorax about as long as broad, with the base rounded, so that the hind angles have disappeared; it is slightly lobed in the middle in front, the front angles nearly right angles; it is densely punctured, the punctures on the middle shallow, subocellate, the sculpture at the sides and base granular. Elytra a little longer than the thorax, dull, densely punctured with an asperate punctuation. Hind body slender and elongate, pointed at the extremity, densely punctured. Legs rather long, yellow, front tarsi elongate and (for the group *Pinophilini*) narrow.

Tapajos; a single individual. It is, I believe, a male, but the extremity of the hind body is retracted, and I have damaged the specimen in trying to withdraw it.

### Œdichirus.

This genus has not been registered as found in the New World, but my collection contains six or eight species from South America. According to a note of Mr. Bates the *Œ. optatus* here described is found on trees.

I believe the *Elytrobœus geniculatus*, Sahlberg, from description (Act. Soc. Fenn. 2, p. 802), to be an insect of this genus, the characters mentioned as separating the genus from *Œdichirus* appearing to me very indefinite. Amongst these, Sahlberg lays stress on the last joint of the antennæ terminating in a spine. On examining the European *Œ. pæderinus*, I find that in some individuals the antennæ end in a short spine or seta; and of the three specimens I possess of *Œ. optatus*, the two females have the extremity of the antennæ truncate, while in the male these organs are terminated by a slender but rather

long spine or seta. I have not, however, made any allusion to this in my description, for I am not at all clear that this character is more than illusory. It appears to me probable that the apex of the antennæ is formed by a projecting membrane which bears the spine, and that the membrane can be retracted, in which case the spine disappears, and the extremity of the antenna is apparently truncate.

1. *Œdichirus optatus*, n. sp. Piceus, antennis, palpis, pedibusque testaceis; elytris thorace fere duplo brevioribus, basi valde angustatis; abdomine magno. Long. corp. $4\frac{1}{4}$ lin.

Mas: abdomine segmento 7° ventrali medio profunde angustius exciso.

Antennæ yellow; $1\frac{1}{4}$ lin. in length, 2nd and 3rd joints about equal. Palpi and mandibles yellow. Head broad and short, the front half bearing ten or twelve coarse punctures; the clypeus in front smooth, the vertex with a few coarse punctures on each side; the hind part bounded on either side by a slightly raised carina. Thorax fully $\frac{3}{4}$ lin. in length, and about $\frac{5}{8}$ in its greatest width, very much narrowed behind, of a shining pitchy colour like the head; the sides in front greatly deflexed, the surface bearing very coarse punctures, consisting of two irregular rows of about a dozen punctures each along the middle, these rows separated on the basal portion by a broad smooth space, but on the anterior portion between them about five coarse punctures on each side, so as to occupy there the middle space; near each side is a shorter row of punctures divergent towards the front; between this and the middle three or four punctures in front of the middle, and also with punctures along the base and margins. Scutellum moderately large, smooth. Elytra, from the apex of scutellum to extremity of suture, $\frac{3}{4}$ lin. in length, curved at the sides and much narrowed at the base, rather paler-pitchy in colour than the thorax; their hind angles projecting a good deal behind, the surface bearing coarse ill-defined punctures and a few long hairs. Hind body ample, the segments coarsely punctured, the 6th and 7th segments only obsoletely and sparingly punctured; the surface is but little shining, the basal portion of each segment being coriaceous; the punctures are quite irregularly disposed. Ths legs are entirely pale yellow.

The male has a narrow but very deep notch on the ventral plate of the 7th segment of the hind body; the middle of the plate on each side of this notch has a large ill-defined depression.

Tapajos; one ♂, two ♀ specimens.

## Palaminus.

The species of this genus hitherto described are only about twelve, and of this number only five are from South America, the others inhabiting North America, Ceylon, and the Cape Verde Islands. Nevertheless the species in South America are excessively numerous, my collection containing about sixty species from that continent. The genus is one of those where the examination and description of the species in a thoroughly satisfactory manner is surrounded with great difficulties. These insects are small and delicate, and the different species bear the greatest resemblance inter se, and apparently in some cases are found together in a gregarious manner. In order to distinguish the species a very careful examination of the sexual characters should be made, and this ought to include an examination of the appendages of the male intromittent organ; these are very different in the different species, and in certain cases are extremely remarkable; bilateral asymetry is very common. The external abdominal sexual characters are in some species striking, while in others they are scarcely present. I cannot mention any general external characters by which the sex of an individual may be distinguished with certainty, but, as a rule, it appears that an excision or notch at the hind margin of the ventral plate of the 7th segment is characteristic of the female, while a conspicuous prolongation of that part generally indicates the individual possessing it to be a male. Erichson (who in his "Genera and Species" has only described four species of the genus) appears to have probably fallen into error in his identification of the sex of the individuals described by him; in the case of one of the species, *P. variabilis*, he enumerates five or six varieties, all of which will, I have no doubt, prove to be distinct species. Twenty species found by Mr. Bates are here described, as well as one other captured by Dr. Trail, and, after comparing them carefully with a large series of species found in the neighbourhood of Rio de Janeiro, I find not a single one is common to the two localities.

1. *Palaminus simplex*, n. sp. Testaceo-ferrugineus, antennis, pedibus, palpisque pallide testaceis; prothorace elongato, basin versus angustato, inæqualiter punctato. Long. corp. $2\frac{1}{2}$—$2\frac{3}{4}$ lin.

Mas et femina: abdomine segmento 7° ventrali simplice.

An elongate and slender species. Antennæ almost white, longer than head and thorax; 3rd joint elongate, longer than the 2nd joint; 11th joint simple, scarcely so long as, and slightly broader than, the 10th. Palpi pale yellow, with the last joint very large. Head yellow, the vertex slightly emarginate, the eyes reaching very near to the back of the head, with a fine margin behind them; the surface is rather coarsely punctured, the punctures, however, not sharply defined, and become more obsolete and sparing towards the vertex. Thorax fully as long as broad, the sides not curved but much narrowed behind; the surface rather coarsely and irregularly punctured, the punctures towards the sides more indistinct than about the middle, the smooth spaces not conspicuous. Elytra slender but considerably broader than, and about one and a half times the length of, the thorax; deeply emarginate behind, so that the outer angle reaches considerably farther back than the suture; ferruginous yellow, slightly darker about the suture; rather deeply and moderately coarsely punctured, the punctuation at base rather close, sparing at the extremity. Hind body slender, darker and less shining than the other parts, ferruginous; the four basal segments coarsely sculptured, the two apical ones smooth. Legs slender and elongate, almost white, basal joint of hind tarsus forming rather more than half the length of the tarsus.

The 7th abdominal segment is nearly similar in the two sexes, and shows no peculiar structure; the terminal joint of the maxillary palpi is, however, considerably larger in the male than in the female, and the dorsal plate of the 7th segment is just a little more prolonged in the middle.

Tapajos, Ega; five individuals, 3 ♂, 2 ♀; also a female individual from Tapajos, which is much broader than the Ega specimens, so that I think it probable a knowledge of the male might show it to be a distinct species.

2. *Palaminus longicornis*, n. sp. Ferrugineus, antennis, pedibus, palpisque pallide testaceis; capite vertice

emarginato, lineâ verticali bene discretâ; prothorace elongato, basin versus angustato. Long. corp. $2\frac{3}{4}$ lin.

Mas latet.

Fem.: abdomine segmento 7° ventrali simplice.

Very closely allied to *P. simplex*, but the vertex is more emarginate, so that the fine line which bounds the vertex is not so straight; the insect is also rather less slender, the thorax is broader in proportion to its length, and has the sides a little rounded and the central space more distinct, and the pubescence of the hind body is more conspicuous.

Ega; a single female individual, which is a little immature.

3. *Palaminus modestus*, n. sp. Ferrugineus, antennis, palpis, pedibusque pallide testaceis, illis elongatis; thorace sat elongato, lateribus rotundatis, basin versus minus angustato. Long. corp. $2\frac{1}{2}$ lin.

Mas: abdomine segmento 7° ventrali producto, apice rotundato, medio excisione parvâ.

Fem. latet.

Antennæ white, slender and very elongate, much longer than head and thorax. Palpi with terminal joint very large. Head rather small, the vertex almost straight; the punctuation similar to that of *P. simplex*. Thorax about as long as broad, a good deal rounded at the sides but not greatly narrowed behind; its surface coarsely and irregularly, not densely punctured, the central space rather conspicuous behind. Elytra broader than the thorax, and nearly one and a half times as long; their punctuation rather coarse, but not dense. Hind body with the pubescence long and conspicuous; the sculpture of the four basal segments coarse, the two apical ones smooth. Legs white; hind tarsi elongate and slender.

In the male the middle portion of the ventral plate of the 7th segment of the hind body is a good deal produced; the hind margin is rounded, and has a small, sharply defined notch in the middle.

Ega; a single male.

Though this species greatly resembles *P. simplex*, it may be very readily distinguished by the male characters; though the female is unknown to me, the different form of the thorax from that of *P. simplex* will no doubt be common to it and the male. The species bears a still greater resemblance to *P. longicornis*, but the head is smaller, the vertex less emarginate, and the thorax less narrowed behind.

4. *Palaminus crassus*, n. sp. Castaneus, antennis, palpis pedibusque pallide testaceis; capite latiore, vertice fortiter emarginato; thorace minus elongato, basin versus fortiter angustato. Long. corp. 2½ lin.

Mas latet.

Fem.: abdomine segmento 7° ventrali simplice.

Antennæ very slender, moderately long, almost white; 3rd joint very slender, a good deal longer than the 2nd; joints 4—8 each very slender, and a little shorter than its predecessor (the three terminal joints are wanting in the individual described). Palpi pale yellow, terminal joint moderately large. Head large, broader than the thorax, and about as broad as the elytra; the eyes distinctly removed from the posterior angles, the vertical line strongly marked, much deflexed in the middle, owing to the emargination of the vertex, and also interrupted in the middle; the surface is coarsely and not densely punctured with distinct, well defined punctures, most numerous between the front part of the eyes, and wanting at the extreme vertex. Thorax rather broad, its length rather less than its width, a little rounded at the sides, and much narrowed behind; the surface sparingly and irregularly punctured with well-defined punctures, these forming a patch on each side the middle; the sides but sparingly punctured, the smooth spaces well marked but not elevated. Elytra one and a half times as long as the thorax, rather paler in colour than the rest of the upper surface, their punctuation moderately coarse and close. The legs are almost white.

Amazons.

The single female individual, the only one I have seen of this species, is very mutilated, and shows no peculiarity of abdominal structure; but the species will be easily recognized by the broad head and the well-defined punctures of the head and thorax, in which respects it resembles some of the black species here described rather than any other pale species I am acquainted with.

5. *Palaminus robustus*, n. sp. Castaneo-testaceus, antennis, palpis, pedibusque pallide testaceis; capite brevi; prothorace subtransverso, crebre minus inæqualiter punctato; elytris crebre punctatis, minus nitidis. Long. corp. fere 3 lin.

Mas latet.

Fem.: abdomine segmento 7° ventrali producto, apice excisione triangulari magnâ, lobis lateralibus acuminatis, leviter recurvis.

Antennæ rather stout (for this genus), almost white, rather short; 3rd joint slightly longer than 2nd; 10th joint about as long as but distinctly stouter than the 9th, 11th a good deal stouter and longer than the 10th, acuminate at the extremity. Palpi pale yellow, last joint not very large. Head very short, broad, almost as broad as the thorax; the vertical line fine, very slightly deflexed in the middle, contiguous at the sides with the hind margin of the eyes, slightly interrupted in the middle; the surface is coarsely and rather closely punctured. Thorax a good deal broader than long, slightly narrower than the elytra, the base and hind angles rounded; the surface rather coarsely and closely punctured, so that the smooth spaces are almost absent. Elytra not quite one and a half times the length of the thorax, rather closely and only moderately coarsely punctured; the punctures near the scutellum dense, at the extremity distinctly more sparing. Hind body broad, darker in colour than the front parts; the two apical segments without imbricate punctures. Legs pale yellow, rather stout and short.

In the female the ventral plate of the 7th segment of the hind body is produced and has a large deep notch in its apical portion; the sides of this plate come to a point at their termination, and are a little curved upwards.

Tapajos; a single specimen.

When I first examined it, I supposed this individual to be a male; but as on dissection I find no trace of the ædeagus, I conclude, with something like certainty, that it is a female.

6. *Palaminus breviceps*, n. sp. Castaneo-testaceus, antennis, palpis, pedibusque pallide testaceis; capite brevi; prothorace transverso, basi sub-truncato. Long. corp. $2\frac{1}{2}$ lin.

Mas latet.

Fem.: abdomine segmento 7° ventrali apice medio excisione sat magnâ.

A rather slender species. The two basal joints of the antennæ are pale yellow, as are, no doubt, also the others, though they are broken off in the specimen described. The palpi are pale yellow, with the terminal joint small.

The head is short, with the vertex scarcely emarginate; the vertical line is fine, contiguous at the sides with the eyes, only slightly deflexed, and interrupted in the middle. The thorax is about as broad as the head, but a little narrower than the elytra, its length considerably less than its width; the sides only slightly curved, and a little narrowed behind, the hind angles obtuse but not rounded; its surface covered with rather coarse punctures, which become wanting at the front angles, but leave no distinct space along the middle smooth; the base in front of the middle slightly bi-impressed. Elytra quite one and a half times the length of the thorax, rather closely and coarsely punctured, with the punctures much more sparing at the extremity. Hind body rather slender, darker in colour than the front parts; the four basal segments with imbricate sculpture. The legs very pale yellow, rather short.

The female has a rather broad, moderately deep notch in the middle of the extremity of the ventral plate of the 7th segment of the hind body.

Amazons, probably Tapajos; a single female.

This species appears rather closely allied to *P. robustus*, but is very much more slender; it has the thorax shorter and the elytra less densely punctured, and in the female the lobes at the sides of the notch of the 7th segment are not acuminate. Though the antennæ are broken, they probably much resemble those of *P. robustus;* the two basal joints which remain are quite as short, but hardly so stout as in *P. robustus*.

7. *Palaminus discretus*, n. sp. Castaneo-testaceus, antennis, palpis, pedibusque pallide testaceis; capite brevi; prothorace transverso, crebre punctato; elytris maculâ suturali fuscâ. Long. corp. $2\frac{1}{3}$ lin.

Mas latet.

Fem.: abdomine segmento 7° ventrali apice truncato.

Antennæ pale yellow, short, rather stout for this genus; 3rd joint much thinner and a little longer than 2nd; 4—9 similar to one another in thickness, each a little shorter than its predecessor; 10th distinctly stouter than 9th, but scarcely longer, 11th distinctly longer and stouter than 10th. The head is short, as broad as the thorax; the vertical line fine, a little deflexed, but scarcely interrupted in the middle, contiguous with the eyes; it is coarsely and closely punctured. Thorax a little narrower than the

elytra, considerably broader than long, the sides a little curved and distinctly narrowed behind; it is coarsely and closely punctured, except at the margins, and has only a very small and narrow smooth space on the middle. Elytra rather paler than the other parts, but with a broad, ill-defined, dark mark on the suture, near the extremity; they are coarsely and rather closely punctured, with the punctures more sparing towards the apex. Hind body rather slender, of a chestnut colour, darker than the front parts; the four basal segments with imbricate sculpture, the next obscurely strigulose, so as to be dull. Legs pale yellow, short and stout.

Rio Purus; a single female, found by Dr. Trail on the 24th September, 1874.

*Obs.*—Though the resemblance between this species and *P. breviceps* is extreme, they will be easily distinguished, as to the female sex at any rate, by the sexual characters; the thorax in *P. discretus* is rather smaller and more narrowed behind.

8. *Palaminus sinuatus*, n. sp. Testaceo-ferrugineus, antennis, pedibus, palpisque pallide testaceis; prothorace elongato, basin versus angustato; antennis minus elongatis. Long. corp. 2 lin.

Mas: abdomine segmento 7° ventrali sub-producto, apice lato, obsolete trisinuato.

Fem. incog.

Antennæ pale yellow, about as long as head and thorax; the apical joint scarcely longer, but distinctly stouter than the 10th. Maxillary palpi pale yellow, the last joint large. Head rather small, quite as broad as the thorax, but narrower than the elytra, moderately punctured along the middle; the vertex with very few punctures, and distinctly emarginate; the vertical line rather fine at the sides, very close to, but not contiguous with, the eyes, distinctly deflexed and interrupted in the middle. Thorax a good deal narrower than the elytra, quite as long as broad, much narrowed behind, but not curved at the sides; punctured on each side the middle with rather coarse punctures, but with very few punctures at the sides and base, and with a central space along the middle, indistinct towards the front, smooth. Elytra not one and a half times the length of the thorax, rather coarsely punctured; the punctures rather close, except at the extremity. Hind

body with the four basal segments with imbricate sculpture, and also with the basal portion of the following segment, with indistinct imbrications. Legs pale yellow, moderately long.

In the male the ventral plate of the 7th segment is very slightly produced, the extremity is broad and faintly trisinuate; the dorsal plate of the same segment is much rounded at the extremity.

Tapajos; a single male.

Though this species greatly resembles *P. simplex* and the allied species here described, it may be distinguished from them by its shorter antennæ.

9. *Palaminus apicalis*, n. sp. Rufescens, antennis, palpis, pedibusque testaceis, abdomine apice piceo; thorace infuscato, sub-transverso, basin versus angustato. Long. corp. $1\frac{3}{4}$ lin.

Mas latet.

Fem.: abdomine segmento 7° ventrali apice emarginato.

Antennæ rather short, about as long as head and thorax, pale yellow; 3rd joint not longer than 2nd, last joint thickened, a good deal broader than the 10th joint and quite as stout as the basal joint. Maxillary palpi pale yellow, their last joint rather small. Head rather small, about as broad as the thorax; the colour reddish, but rather infuscate across the middle; the vertex scarcely emarginate, the vertical line fine, at the sides very near to the eyes, scarcely deflexed and slightly interrupted in the middle. Thorax a little shorter than broad, distinctly narrower than the elytra, curved at the sides and a good deal narrowed behind; the colour reddish, but much infuscate; the punctuation rather fine; the surface with two impressions on the middle towards the base, separated by a slight, raised, smooth space. Elytra about one and a half times as long as the thorax, their punctuation sparing except about the scutellum; they are reddish in colour at the base, pale yellow at the extremity. Hind body rather dark red, with the 7th segment, and the 8th infuscate; four basal segments with imbricate sculpture. Legs pale yellow.

The female has the ventral plate of the 7th segment of the hind body distinctly emarginate at the apex.

Tapajos; a single individual.

10. *Palaminus fragilis*, n. sp. Pallide testaceus, abdomine rufo-testaceo; antennis articulo ultimo incrassato; prothorace transverso, basin versus angustato, lateribus rotundatis, crebre punctato; elytris thorace fere duplo longioribus, basi crebre punctatis. Long. corp. $1\frac{1}{3}$ lin.

Antennæ rather short, and for this genus rather stout, almost white; 3rd joint small, finer and rather shorter than 2nd; last joint broader than the 10th, and as long as the 9th and 10th together. Palpi pale yellow, terminal joint small. Head small, with the vertex scarcely visibly emarginate; the vertical line fine and indistinct, at the sides contiguous with the eyes. Thorax a good deal narrower than the elytra, quite as broad as the head, a good deal broader than long, curved at the sides, and a good deal narrowed behind; its surface coarsely punctured, without smooth middle space and only extremely obsoletely bi-impressed. Elytra about twice as long as the thorax, rather closely punctured at the base; the punctures becoming gradually more sparing towards the extremity, where they are nearly entirely wanting. Hind body reddish, darker than the front parts; the four basal segments with imbricate sculpture. Legs almost white, rather short.

Ega; a single individual, whose sex is uncertain; the ventral plate of the 7th segment is very slightly produced, almost truncate at the apex, with the angles rounded.

This is the smallest species I have seen of the genus.

11. *Palaminus niger*, n. sp. Niger, antennis, palpis, pedibusque pallide flavis; thorace elongato, basin versus angustato, sat crebre irregulariter punctato, lateribus parce punctatis; elytris fortiter minus crebre punctatis. Long. corp. 3 lin.

Mas incog.

Fem.: abdomine segmento 7° ventrali medio obsolete emarginato; dorsali medio rotundato-truncato, utrinque distincte emarginato.

A rather slender species. Antennæ long and slender, pale yellow, distinctly longer than head and thorax; 3rd joint very slender, elongate, considerably longer than 2nd; 11th joint slender, only slightly broader than 10th. Palpi pale yellow, only moderately large. Head quite as broad as the thorax, but slightly narrower than the elytra; the vertex a little emarginate, the vertical line fine, at the

sides very close to the eyes, only slightly deflexed in the middle; the surface rather coarsely but not closely punctured. Thorax about as long as broad, a good deal narrowed behind but hardly at all curved at the sides, irregularly punctured; the middle with two series of punctures, divergent towards the front, joined together in front of the base, and slightly impressed behind, the front part of the included space bearing large punctures, so that only a small part behind is free from them; outside these central series are a few punctures scattered at the sides. Elytra about one and a half times the length of the thorax, coarsely but not closely punctured, the punctures more sparing towards the apex. Hind body with the four basal segments with imbricate sculpture, the two apical ones smooth. Legs pale yellow, rather long.

The female has the dorsal plate of the 7th segment of the hind body with a curved emargination on each side, between which the hind margin is a little rounded, but slightly truncate in the middle; the ventral plate has the hind margin almost truncate, but with a slight emargination in the middle.

Ega; two female individuals.

12. *Palaminus anceps*, n. sp. Niger, antennis, palpis, pedibusque pallide flavis; thorace basin versus minus angustato, lateribus rotundatis, sat crebre irregulariter punctato, lateribus parce punctatis; elytris sat crebre punctatis. Long. corp. 3 lin.

Mas: abdomine segmento 7° dorsali medio rotundato; ventrali producto, apice subovali, medio excisione parvâ.

Fem. incog.

This insect resembles extremely the *P. niger*, but has the thorax rather different, the sides being a little more curved, but less narrowed behind, and the elytra are slightly more finely and closely punctured; these differences are but slight, and it is possible that the single individual I have seen may be the male of *P. niger*.

The dorsal plate of the 7th segment of the hind body is much rounded in the middle, and deeply sinuate on each side; the ventral plate is a good deal produced, and the produced part would have the form of half of an oval plate, were it not for a small notch in the middle at the extremity.

Ega.

*Obs.*—*P. modestus*, above described, resembles this species, both in the external characters of the male and the structure of the ædeagus, but differs strikingly in colour; it is just possible, however, as all other characters seem to agree, that *P. modestus* is only an immature form of the *P. anceps*.

13. *Palaminus sobrinus*, n sp. Niger, antennis, palpis, pedibusque pallide flavis; thorace elongato, basin versus angustato, crebre punctato; elytris fortiter punctatis. Long. corp. $2\frac{1}{2}$ lin.

Antennæ pale yellow, rather slender, moderately long; 3rd joint distinctly longer than 2nd, 11th a little stouter than 10th. Palpi pale yellow. Head about as broad as the thorax; the vertex a good deal emarginate, the vertical line contiguous with the eyes at the sides, strongly deflexed in the middle, and distinctly interrupted by a longitudinal depression; the surface coarsely, distinctly and closely punctured. Thorax quite as long as broad, greatly narrowed behind, but not in the least rounded at the sides, the middle part closely punctured; in front of the base a slightly raised longitudinal smooth space in the middle, the lateral margins sparingly punctured. Elytra scarcely one and a half times the length of the thorax, rather coarsely punctured, the punctures not very close, the apical margin quite smooth. Hind body with imbricate sculpture on the four basal segments, and also on the anterior part of the following segment. Legs pale yellow, rather long.

The structure of the 7th abdominal segment is but little dissimilar in the two sexes, the hind margins being almost simple; the terminal joint of the maxillary palpi is, however, considerably larger in the male than in the female.

Tapajos; two individuals, male and female.

14. *Palaminus puncticeps*, n. sp. Niger, antennis, palpis, pedibusque pallide flavis; thorace minus elongato, basin versus angustato, crebre irregulariter punctato; elytris crebre punctatis. Long. corp. $2\frac{1}{3}$ lin.

Antennæ pale yellow; 3rd joint slender, a good deal longer than 2nd; joints 4—6 rather short (a good deal shorter than in *P. sobrinus*), the others broken off. Palpi pale yellow. Head slightly broader than the thorax, the vertical line distinct, very close to the eyes at the sides, strongly deflexed in the middle, and interrupted by a longi-

tudinal depression; the surface convex, coarsely, distinctly and rather closely punctured. Thorax not so long as broad, a little rounded at the sides, and narrowed behind; in the middle is a smooth shining space, not reaching the front, and on each side of this the surface is slightly depressed, the depressions coarsely and closely punctured; towards the sides, in the middle, are some other punctures, as also in front of the smooth space, and a few at the lateral margins and base. Elytra more than one and a half times the length of the thorax, distinctly and rather closely punctured, the punctures becoming only a little more sparing towards the extremity, but the apical margin quite smooth and impunctate. Hind body slender; the four basal segments with imbricate sculpture, and the anterior portion of the following segment with similar but less distinct sculpture. Legs pale yellow, rather long.

The male shows little peculiarity in the structure of the 7th segment of the hind body.

Tapajos; a single male specimen.

*Obs.*—This species greatly resembles *P. sobrinus*, but may be readily distinguished by the shorter thorax; the elytra also are more closely punctured. The structure of the ædeagus is not very dissimilar in the two species, but its size in *P. sobrinus* is double that of *P. puncticeps*.

15. *Palaminus parcus*, n. sp. Niger, antennis, palpis, pedibusque pallide testaceis; thorace sat elongato, basin versus angustato, lateribus leviter rotundatis; elytris sat crebre punctatis, apice late lævigatis. Long. corp. 2½ lin.

Antennæ almost white, rather long, slender; 3rd joint elongate and slender, much longer than 2nd; 11th joint only slightly broader than 10th. Palpi pale yellow, last joint small (in the female). Head large, a little broader than the thorax; the vertex greatly emarginate, the vertical line coarse, at the sides remote from the eyes, greatly deflexed in the middle, and with a narrow interruption; the front part between the eyes coarsely and closely punctured, the vertical portion sparingly punctured, and at the back in front of the line the surface broadly coriaceous and opaque. Thorax about as long as broad, a good deal narrowed behind, and distinctly rounded at the sides; the surface coarsely but irregularly punctured, the punctures consisting of two broadly-separated, rather divergent series, between which, on the front portion, are two other series,

and between the middle and the sides are a few other punctures; the two main series are only very slightly impressed. Elytra about one and a half times as long as the thorax, the basal portion rather closely punctured; the punctures become more sparing towards the extremity, and at the apex are quite wanting. Hind body with the four basal segments with imbricate sculpture. Legs almost white, rather long and slender.

In the female the 7th segment of the hind body is simple, the hind margin of the dorsal plate being slightly rounded, while that of the ventral plate (which is scarcely longer) is almost truncate, being scarcely visibly emarginate in the middle.

Tapajos; a single female. Also from the same locality I have another female, which may possibly be a distinct species, the head being a little smaller and the elytra with rather more punctures towards the extremity.

16. *Palaminus pellax*, n. sp. Niger, antennis, palpis, pedibusque pallide testaceis; thorace sat elongato, basin versus angustato, lateribus leviter rotundatis; elytris parcius punctatis, apice late lævigatis. Long. corp. $2\frac{1}{2}$ lin.

Head rather large, with the surface in front of the vertical line scarcely coriaceous. Thorax with two dorsal series of punctures convergent in front of the base; between these in front with a few punctures, and with a few other punctures between the middle and the sides; the main series scarcely impressed, but the portion between them distinctly elevated except in front. The elytra are rather sparingly punctured, the punctures becoming more sparing towards the extremity and altogether wanting at the apex.

In the female the dorsal plate of the 7th segment of the hind body is nearly truncate, being only very slightly rounded in the middle; at the extremity the ventral plate is scarcely longer than the dorsal one, and, like it, is rounded, though rather more distinctly, at the apex.

Amazons; a single female, without special locality.

*Obs.*— This species resembles *P. parcus* extremely, and differs from the description above given of that species only in the characters here mentioned.

17. *Palaminus fuscipes*, n. sp. Niger, antennis, palpis, pedibusque pallide testaceis, tibiis infuscatis; capite magno;

thorace sat elongato, basin versus sat angustato, parce punctato; elytris parce punctatis, apicem versus lævigatis. Long. corp. fere 3 lin.

Antennæ pale yellow, slender, rather long; 3rd joint very elongate and slender, quite one and a half times the length of the 2nd, 11th only slightly broader than 10th. Palpi pale yellow, last joint moderately large (in the male). Head large, broader than the thorax, about the width of the elytra; the vertex emarginate and depressed in the middle, the vertical line coarse but not much raised, deflexed in the middle and interrupted, at the sides remote from the eyes; the surface coarsely punctured, the punctures moderately close on the front part, sparing towards the vertex, in front of the vertical line a little coriaceous. Thorax about as long as broad, the sides slightly rounded, distinctly narrowed behind; the surface sparingly punctured, the middle space broad and a little elevated behind. Elytra at the sides one and a half times the length of the thorax, even at the base sparingly and not closely punctured, the apical portion impunctate. Hind body with imbricate sculpture on the four basal segments. Legs almost white at the base; the tibiæ and also the extremity of the hind femora infuscate.

External abdominal characters to distinguish the male are almost absent; the dorsal plate of the 7th segment has the hind margin very slightly rounded; the ventral plate is scarcely longer than the dorsal, and is truncate, with the outer angles rounded.

Tapajos; a single male specimen.

18. *Palaminus stipes*, n. sp. Niger, antennis, palpis, pedibusque pallide testaceis, tibiis infuscatis; capite magno; thorace sat elongato, basin versus angustato, parce punctato; elytris fortiter minus crebre punctatis. Long. corp. $3\frac{1}{4}$ lin.

This species greatly resembles *P. fuscipes*, but is rather larger and much broader, and has the elytra more closely punctured, especially at the extreme base; in all other respects the description above given of *P. fuscipes* will apply to the *P. stipes*.

The female has the extremity of the dorsal plate of the 7th segment of the hind body truncate; the ventral plate

has the hind margin very slightly emarginate in the middle.

Tapajos; a single female.

19. *Palaminus sellatus*, n. sp. Piceus, antennis, palpis, pedibusque pallide testaceis, elytris lateribus plagiatim testaceis; prothorace basin versus angustato, lateribus rotundato, parce punctato; elytris minus crebre punctatis. Long. corp. fere 3 lin.

Antennæ rather long and slender, pale yellow; 3rd joint elongate and slender, a good deal longer than 2nd, 11th a little stouter than 10th. Palpi yellow, with the last joint small (in the female). Head large, a little broader than the thorax, and almost as broad as the elytra; the vertex a good deal emarginate, the marginal line moderately remote from the eyes at the sides, in the middle much deflexed and a little interrupted; the surface coarsely punctured, the punctures rather close towards the front, widely separated at the vertex. Thorax broad, very nearly as long as broad, much narrowed behind, a little rounded at the sides, the front angles greatly rounded; the surface sparingly and coarsely punctured, the punctures consisting of two divergent, rather widely separated series along the middle, with accessory punctures between them on the front part, and outside them with a few other punctures; the depression at the hind part of the main series is only slight. Elytra about one and a half times as long as the thorax, pitchy in colour, with a broad straight stripe at each side testaceous; they are rather sparingly and coarsely punctured, the punctures becoming more sparing towards the extremity. Four basal segments of the hind body with imbricate sculpture. Legs almost white, rather long.

The female has the hind margins of the dorsal and ventral plates of the 7th segment of the hind body very slightly rounded, being very nearly truncate.

Tapajos; two female individuals.

20. *Palaminus gracilis*, n. sp. Elongatus, angustus, nigricans, antennis, palpis, pedibus, elytrorumque apice pallide testaceis; capite parvo; prothorace elongato, basin versus sat angustato; elytris parce fortiter punctatis. Long. corp. $2\frac{2}{3}$ lin.

Antennæ long and slender, much longer than head and

thorax, pale yellow; 3rd joint elongate and slender, a good deal longer than 2nd joint; 11th joint slender, slightly broader than the slender 10th joint. Palpi with the terminal joint small (in the female). Head small, but almost as broad as the thorax; the vertex scarcely emarginate, the vertical line fine, contiguous with the eyes at the sides, distinctly deflexed and a little interrupted in the middle; the surface rather coarsely punctured. Thorax small, rather longer than broad, distinctly narrowed behind; the surface rather coarsely punctured, the punctures not sharply defined; the middle between the dorsal series distinctly elevated behind, the dorsal series indistinct; the sides sparingly punctured, the front angles smooth. Elytra more than one and a half times the length of the thorax, black, with the hind margin narrowly straw-colour; coarsely and sparingly punctured, the punctures more sparing towards the extremity. Four basal segments of hind body with imbricate sculpture. Legs long and slender, pale yellow.

In the female the hind margin of the dorsal plate of the 7th segment of the hind body is rounded in the middle, and distinctly sinuate on each side; that of the ventral plate is truncate, with the outer angles rounded.

Ega; a single female.

21. *Palaminus distans*, n. sp. Robustus, nigricans, antennis, palpis, elytrorumque apice pallide testaceis; capite magno; prothorace parce punctato, evidenter biimpresso; elytris basi dense, apice parce punctatis. Long. corp. $2\frac{2}{3}$ lin.

Antennæ almost white, only moderately long and slender; 3rd joint distinctly longer than 2nd, 11th hardly stouter than 10th. Palpi pale yellow, last joint rather small (in the female). Head large, rather broader than the thorax, but not quite so broad as the elytra; the vertex much emarginate, the vertical line remote from the eyes at the sides, much deflexed in the middle, and interrupted; the surface coarsely but not closely punctured, the punctures more distant towards the vertex. Thorax not quite so long as broad, rounded at the sides and narrowed behind, only sparingly punctured; the middle part elevated, on each side of the elevation is an irregular series of punctures in a depression; between these series, which are widely separated, are only four or five punctures, and outside

them only a very few others. Elytra at the sides quite one and a half times as long as the thorax; they are blackish in colour, with a distinct narrow band of straw-colour at the extremity; they are closely punctured, except at the extremity, the punctures at the base being quite dense. Four basal segments of hind body with imbricate sculpture. Legs rather long, almost white.

In the female the hind margin of the dorsal plate of the 7th segment of the hind body is almost truncate, being straight in the middle, and only slightly longer at the sides than in the middle; the hind margin of the ventral plate is also almost truncate, being only slightly emarginate in the middle.

Tapajos; a single individual.

### Stenæsthetus.

This genus was characterized by me a year or two ago, for the purpose of describing an interesting species from Japan, which had no very near known ally. I was therefore much astonished when, on examining the species here described, I found it to be so closely allied to the Japanese insect, that I have not been able to find any characters to distinguish it as a genus therefrom. The Amazonian species possesses the heteromerous tarsi, with the very elongate basal joint to the hind feet of the Japanese insect; and though I have not dissected the mouth of the New World species, its parts, so far as I can see, are quite similar to those of the *S. sunioides*. I have not, however, been able to see the base of the maxillary palpi in *S. illatus*. In my description of the genus (Trans. Ent. Soc. Lond. 1874, p. 79) I neglected to mention the form of the labrum: it is large and simply rounded, without notch or denticulations, and seems quite similar in the two species; in the *S. illatus* the paraglossæ (or possibly the sides of the ligula) project beyond the labrum, and have much the appearance of two slender denticles, so that it might readily be supposed, on a superficial examination, that the labrum was armed with two slender teeth in the middle. As regards the number of joints in the antennæ I am still uncertain whether it be ten or eleven; if the latter number be correct, then there are two stout basal joints, of which the first is short and concealed by the elevation over the point of insertion. The position of the genus is undoubtedly between *Euæsthetus* and *Stenus*, and the occur-

rence of this form in South America as well as in Japan renders it highly probable that other links will be found between these two dissimilar genera. I may indeed here express my opinion that the interesting genus *Ctenomastax*, recently described by Kraatz, from Spain, should be placed next *Euæsthetus*, and not among the *Pæderidæ;* indeed, the descriptions and figures of Kraatz and Fauvel appear to point out as generic distinction from *Euæsthetus* only a slight difference in the insertion of the antennæ.

1. *Stenæsthetus illatus*, n. sp. Castaneo-testaceus, fere glaber, subnitidus, capite, thorace, elytrisque crebre sat fortiter punctatis, abdomine subtilissime punctulato; thorace subcordato, elytris hujus longitudine. Long. corp. $1\frac{1}{8}$ lin.

Antennæ very slender, but with the basal joint stout, it being quite four times as broad, though scarcely so long as, the 2nd; joints 2—8 excessively slender, differing little from one another in length, 9 and 10 very slender, but distinctly broader than the preceding ones, 10th rather longer than 9th. Head short and broad, with the eyes rather broader than the thorax; near the front with two distant foveæ; moderately closely punctured; the punctures, when seen under a high power, are umbilicated, as in *Sunius*, but the interstices are broad, and covered with a very fine, intricate reticulation, which renders the surface nearly opaque; the eyes very convex, moderately large, coarsely facetted, reaching the broad vertex. Thorax a good deal narrower than the elytra, rather longer than broad; the sides a little rounded in front of the middle, narrowed behind the rounded part; the hind angles nearly right angles, not rounded; the surface rather coarsely sculptured, with sculpture similar to that of the head, but the punctures deeper and the interstices narrower; along the middle of the basal part are traces of two longitudinal impressions. Elytra about as long as and rather more coarsely punctured than the thorax. Hind body robust, but with the apical segments very narrow, excessively finely and indistinctly punctured, not shining. Legs slender, pale yellow.

In the male, on the underside, the 4th and 5th segments of the hind body are plicate in the middle, and the elevated part is slightly produced; the 6th has the hind margin slightly emarginate.

Tapajos; one ♂, 2 ♀ individuals; a specimen was also found at Lages, near Manaos, by Dr. Trail, on the 5th January, 1875.

*Obs.*—This species differs from *S. sunioides* by the larger and more convex eyes, which reach quite to the back of the head.

## Stenus.

Although the species of this world-wide distributed genus seem to be everywhere amongst the most numerous of the *Staphylinidæ*, yet only fourteen or fifteen species have been as yet described from the warmer parts of the New World. The twenty-five species here described will help, therefore, somewhat to rectify this disproportion, and indicate that the genus is richly represented in South America, as elsewhere.

Of these species the first eight might, I should have thought, have been properly placed in Erichson's division I. B. Erichson, however, has described three or four species from Columbia (*S. augur*, &c.), which I judge from his descriptions are very closely allied to these eight species, and has placed them in his division I. A. I have therefore left these species without indication as to their position in Erichson's classification of the genus. Species 12 to 18 belong to a group of which the species are numerous in South America, but no species of it occur in Europe. Species 20—25 might be placed in a natural manner between the European *S. cicindeloides* and *S. contractus*.

1. *Stenus inspector*, n. sp. Niger, subopacus, antennis fuscis, basi obscure testaceis, palpis flavis, pedibus testaceis, geniculis infuscatis; fronte excavatâ, vertice angustissime carinato; thorace profunde transversim rugoso-punctato; elytris thoracis longitudine, dense fortiterque punctatis; abdomine gracili, crebre, basi distincte, apice obsolete, punctato, submarginato; tarsis gracilibus, articulo 4° vix lobato. Long. corp. 2½ lin.

Antennæ moderately long, pitchy, yellowish at the base; 3rd joint a good deal longer than 4th; the three apical joints distinctly stouter, the 10th distinctly longer than broad. Palpi pale yellow. Head with the eyes large, quite as broad as the elytra; the front distinctly excavated, the clypeus abruptly deflexed; the surface densely and

coarsely punctured, obsoletely bisulcate, with an extremely narrow carina at the vertex. Thorax a good deal narrower than the elytra, a good deal longer than broad; the sides rounded in front of the middle, and narrowed behind the middle; the surface covered with a very dense, transversely rugose punctuation. Elytra quite as long as the thorax, coarsely, deeply and very closely punctured, the shoulders standing abruptly out from the base of the thorax. Hind body slender and elongate, the basal segment distinctly margined, the following segments each constricted in front of the middle; the constricted part obscurely margined, the apical part not margined; the surface rather closely punctured, the punctuation on the basal segment distinct, but not coarse, on the penultimate segments indistinct; the front part of the two basal segments finely carinate on the middle. Legs yellow, coxæ pitchy, the knees infuscate; the 4th joint of the tarsi small, and scarcely lobed.

In the male the under surface of the 6th segment of the hind body is clothed with fine, pale-yellow pubescence, and is distinctly emarginate at the hind margin; the 3rd, 4th and 5th segments also have the hind margin very obscurely truncate in the middle, the 7th bears a narrow, very elongate notch.

Ega; a single male.

*Obs.*—I have not referred this species to any of the generally received sections, because doing so would be very likely to create confusion about it. The tarsi might be described as having the 4th joint simple, but this would not be strictly correct, and the same remark would be applicable if the hind body were described as unmargined. The species suggests at first sight an alliance with *S. speculator*.

2. *Stenus obductus*, n. sp. Niger, subnitidus, palpis flavis, antennarum basi pedibusque testaceis, femoribus tarsisque apicem versus infuscatis; fronte bisulcatâ, vertice carinato; thorace transversim rugoso-punctato, elytris fortiter denseque punctatis, interstitiis versus suturam latioribus; abdomine crebre distinctius, apicem versus obsolete punctato, segmento basali marginato. Long. corp. $2\frac{1}{4}$ lin.

Antennæ rather short, pitchy, with the basal joints yellow; palpi pale yellow. Head with the eyes scarcely

so broad as the elytra, densely and coarsely punctured, a little excavate, distinctly bisulcate, and with a narrow central carina. Hind body slender; the basal segment marginate, and the anterior portion of the next following segment finely margined, the others immarginate; the segments rather closely punctured, the punctures on the basal segment quite distinct, but becoming less deep on the following segments, so as to be obsolete on the penultimate segments; the segments bear also a fine, depressed, scanty, ashy pubescence. The legs are long and slender, the hind tarsi elongate and slender, with the 4th joint simple; the coxæ are pitchy black, the femora are yellowish, but somewhat infuscate towards the extremity, and the tarsi become more obscure in colour towards the apex.

In the male the 6th segment beneath is broadly but faintly impressed along the middle; the impressed part is pubescent and densely punctured; the pubescence towards the apex of the segment is dense at each side of the impression, the hind margin scarcely emarginate; the following segment bears a narrow elongate notch.

Ega; two males.

*Obs.*—This species is closely allied to *S. inspector*, but is undoubtedly distinct; the character of the sculpture is very similar, but is less dense on the thorax and elytra of *S. obductus*; and other less striking differences are conveyed by the two descriptions; the tarsi of *S. obductus* have the 4th joint slender and simple.

3. *Stenus tinctus*, n. sp. Æneo-niger, vix nitidus, palpis flavis, antennis fuscis, basi cum pedibus testaceis, femoribus versus apicem obscurioribus; fronte bisulcatâ et carinatâ; thorace fortiter transversim rugoso-punctato, elytris dense fortiter punctatis, interstitiis versus suturam latioribus. Long. corp. 2 lin.

Antennæ pitchy, yellowish at the base, rather short; palpi pale yellow. Head slightly narrower than the elytra, densely and rather coarsely punctured, a little excavate, and with a distinct shining carina along the middle. Thorax distinctly narrower than the elytra, rather longer than broad, the sides much rounded in front of the middle; the surface covered with coarse and deep transverse rugæ, with one or two of the interstices about the middle rather broader. Elytra rather short and broad, about as long as the thorax; the humeral angles well marked, coarsely and

closely punctured, with the interstices near the suture distinct, broader than the external ones. Hind body rather slender, subcylindric; the basal segment margined, the four following ones each with a slight margin on the basal portion; the segments rather closely but obsoletely punctured, the basal one rather more distinctly than the others, and with a carina at the base in the middle, the two following ones with more indistinct carinæ; all the segments with a well-marked, fine, depressed, pale-yellow pubescence. Legs moderately long, reddish-yellow; the femora, as also the tibiæ and tarsi, more obscure in colour in their apical portion; 4th joint of tarsi simple.

In the male the underside of the 6th segment is flattened along the middle and finely pubescent; the 7th segment has a very elongate and narrow notch.

Tapajos; a single male.

*Obs.*—This species is very closely allied to *S. obductus*, but is more metallic in colour, rather less elongate in form, has the thorax with the sculpture rather coarser, the sides more rounded, the hind body more obsoletely punctured, and the limbs rather shorter and stouter.

4. *Stenus cognatus*, n. sp. Æneo-niger, subnitidus, palpis flavis, antennis fuscis, basi cum pedibus testaceis; fronte bisulcatâ et carinatâ; thorace fortiter transversim rugoso-punctato; elytris fortiter punctatis, interstitiis nitidulis. Long. corp. fere 2 lin.

Antennæ short, yellowish, infuscate at the extremity; palpi pale yellow. Head nearly as broad as the elytra, a little excavate, and distinctly carinate along the middle. Thorax longer than broad, a good deal rounded at the sides; the surface coarsely sculptured, with transverse rugæ, the interstices of which are broad enough to be distinctly shining. Elytra about as long as the thorax, coarsely punctured, with the interstices distinctly shining. Hind body slender, subcylindric; the basal segment margined, the four following ones each with a slight margin on the basal portion; the segments rather closely but obsoletely punctured, the basal one rather more distinctly than the others, and with a carina at the base in the middle, the two following ones with more indistinct carinæ; all the segments with a fine, depressed, pale-yellow pubescence. Legs moderately long, reddish-yellow.

In the male the underside of the 6th segment is flattened

along the middle and finely pubescent, the hind margin slightly emarginate; the 7th segment has a very elongate and narrow notch.

Tapajos; two males.

*Obs.*—This species bears an extreme resemblance to *S. tinctus*, but is more slender; it is more shining, has the punctures on the elytra rather less crowded, so that the interstices are more shining, and the limbs are still shorter.

5. *Stenus vacillator*, n. sp. Æneo-niger, subnitidus, palpis flavis, antennis fuscis, basi cum pedibus testaceis; fronte bisulcatâ et anguste carinatâ; thorace fortiter transversim rugoso-punctato; elytris fortiter punctatis, interstitiis nitidulis. Long. corp. fere 2 lin.

Antennæ dusky yellow, infuscate towards the extremity, short; 10th joint about as long as broad. Head nearly as broad as the elytra, densely punctured, distinctly excavate, and with a very fine but distinct shining carina along the middle. Thorax rather longer than broad, distinctly rounded at the sides, deeply transversely rugose, the interstices narrow. Elytra about as long as the thorax, rather coarsely and closely punctured, the interstices wider on a space near the suture than elsewhere. Hind body rather closely punctured, the basal segment distinctly, the apical ones obsoletely; the basal segment very finely carinated in the middle, the following two only very obsoletely carinate.

Tapajos; a single female.

*Obs.*—I have some doubts whether the individual above described be really distinct from *S. cognatus*. It is just the same size as that species, but has the antennæ a little shorter, the vertex more finely carinate, the interstices of the sculpture on the thorax and elytra rather narrower, and the carinæ of the basal segments of the hind body less distinct. These differences, however, are but slight, and it is possible may be sexual or individual rather than specific characters. I have, however, another female from St. Paulo which agrees in these respects with the *S. vacillator*, and is probably conspecific with it; but as it departs very slightly in one or two other respects from the Tapajos individual, I have drawn my description entirely from the latter.

6. *Stenus cursitor*, n. sp. Gracilis, æneo-niger, niti-

dulus, antennis fuscis, basi cum pedibus testaceis, palpis flavis; fronte excavatâ et medio carinatâ; thorace subcylindrico, transversim rugoso-punctato; elytris fortiter punctatis; abdomine crebre, obsolete punctato. Long. corp. $1\frac{7}{8}$ lin.

Antennæ rather short, the basal joints yellow, the others infuscate; palpi very pale yellow. Head rather narrower than the elytra, between the eyes coarsely punctured but distinctly shining; a little excavate, with a shining carina along the middle. Thorax much narrower than the elytra, much longer than broad, very little rounded in front of the middle, and but little narrower at the base than in the middle; densely covered with a deep, transversely rugose sculpture. Elytra along the suture quite as long as the thorax, coarsely and closely punctured; the interstices near the suture rather broader than elsewhere. Hind body slender, but a good deal narrower at the apex than the base; the basal segment margined and finely carinate in the middle, the two following segments scarcely carinate, the segments rather closely punctured; the punctures on the ante-apical segments obsolete, the pubescence depressed, fine pale yellow. Legs slender, rather long, yellowish; the femora and tarsi darker towards the apex.

Tapajos; a single female.

*Obs.*—This species is very closely allied to the *S. cognatus*, but its more slender form, the smaller and more shining area separating the eyes, and the more cylindric thorax, leave me no doubt that it is specifically distinct therefrom. At first sight it suggests, to any one acquainted with the European species, *S. proditor* or *S. impressipennis*. It may be well to give a detailed comparison with the *S. proditor*. Besides the brassy colour of its upper surface and the paler legs and palpi, *S. cursitor* has the head more excavate and the central elevation narrower, polished and impunctate. The thorax is much more cylindric, with deep transverse rugæ for sculpture; the punctures of the elytra are deeper and rather coarser; the hind body is more slender and cylindric, the basal segment only distinctly though finely margined, and the same segment is finely carinate in the middle as in *S. proditor*, but the following segments are scarcely carinate; the punctures on the basal segment are not very dissimilar to those of *S. proditor*, but on the following segments they are more indistinct; the legs are about as long, but are

rather more slender, the tarsi being conspicuously more slender.

7. *Stenus fallax*, n. sp. Æneo-niger, dense punctatus, subopacus, palpis flavis, antennis pedibusque testaceis, illis apice infuscatis; fronte excavatâ, medio carinatâ; abdomine sat robusto, crebre, apicem versus obsolete, punctato, segmento basali marginato; tarsis gracillimis, articulo 4° simplice. Long. corp. 2 lin.

Antennæ moderately long, yellowish, infuscate towards the extremity; palpi pale yellow. Head about as broad as the elytra, excavate between the eyes, and with a distinct shining carina in the middle of the excavation. Thorax rather longer than broad, the sides in front of the middle distinctly rounded; the surface coarsely and closely punctured, the punctures somewhat confluent, so as to form transverse rugæ. Elytra about as long as the thorax, deeply, densely and coarsely punctured. Hind body moderately broad, with the basal segment finely margined, and carinate at the base in the middle, the two following segments with less elongate carinæ; the segments rather closely punctured, the punctures much finer towards the apex than on the basal segment. Legs yellow; the femora and tarsi obscured towards the extremity.

In the male the 6th segment of the hind body beneath is broadly impressed along the middle; each side of the impression towards the extremity is densely pubescent, and there is a notch on each side concealed by the pubescence; the following segment bears an elongate narrow notch; the 4th and 5th segments are also a little flattened along the middle.

Tapajos; one male, one female specimen.

*Obs.*—This species, at first sight, a good deal suggests our common European *S. impressus:* though closely allied in structure to *S. cognatus* and the neighbouring species, it is undoubtedly distinct from them all.

8. *Stenus simulator*, n. sp. Angustulus, niger, vix æneoscens, nitidulus, palpis flavis, antennis fuscis, pedibus testaceis, femorum apice obscuriore; fronte excavatâ, medio carinatâ; thorace elytrisque dense fortiter punctatis; abdomine segmento basali marginato, dense sat fortiter punctato, segmentis antepenultimis dense obsolete punctatis; tarsis articulo 4° simplice. Long. corp. $1\frac{3}{4}$ lin.

Antennæ pitchy, not paler at the base, moderately long; 3rd joint a little longer than 4th; club slender. Palpi pale yellow. Head with the eyes as broad as the elytra, distinctly excavate, and with a shining carina at the bottom of the excavation. Thorax rather narrow, but longer than broad, much narrower than the elytra; the sides distinctly rounded in front and narrowed at the base; the surface densely punctured, the punctures arranged so as to make the interstices assume somewhat the form of transverse ridges. Elytra rather narrow, quite as long as the thorax, densely and coarsely punctured. Hind body slender, the basal segment rather coarsely punctured, carinate in the middle at the base, and finely margined at the sides; the two following segments more indistinctly carinate in the middle, and more finely punctured; the segments towards the extremity very finely punctured, and with a very fine, depressed pubescence. Legs slender, rather long, yellowish; the femora a little darker towards the extremity; tarsi very slender, 4th joint quite simple.

In the male the 5th segment of the hind body on the underside is broadly impressed along the middle before the extremity; the 6th is still more deeply impressed, and has the edges of the impression a little raised, and furnished towards the extremity with a ridge of raised black pubescence; the 7th segment bears a very long and extremely narrow notch.

Tapajos; a single male.

*Obs.*—This species is conspicuous amongst its close allies here described by the dark basal joints of the antennæ.

9. *Stenus certatus*, n. sp. (Sect. I. A, Er.) Niger, vix ænescens, fere opacus, antennis, palpis, pedibusque testaceis, prioribus apice infuscatis; capite thoraceque dense fortiterque punctatis; abdomine tenuiter marginato, crebre, basi sat fortiter, apice obsolete, punctato. Long. corp. $1\frac{2}{3}$ lin.

Antennæ slender, rather long, yellow, the slender extremity infuscate; 3rd joint hardly any longer than 4th. Palpi slender, pale yellow. Head with the eyes large, very nearly as broad as the elytra, distinctly excavate; at the bottom of the excavation with a slightly elevated shining longitudinal space. Thorax longer than broad, a good deal narrower than the elytra, the basal portion dis-

tinctly constricted; the surface coarsely and extremely densely punctured; the interstices very small, so that the sculpture is deeply rugose. Elytra slightly longer than the thorax, with the humeral angles prominent and well marked, coarsely, deeply, very closely punctured, scarcely at all shining. Hind body narrowed towards the extremity; all the segments finely margined, the three or four basal ones finely carinate at the base in the middle; the basal segment rather closely and distinctly, the apical ones finely and obsoletely, punctured. Legs unicolorous yellow, very slender, rather long; hind tarsi elongate and slender, clear yellow; 4th joint slender and simple.

Ega; a single female.

*Obs.*—This species is about the size of *S. incanus*, but is a little more elongate in proportion to the width, the antennæ and legs are longer and more slender; the elongate basal joint of the front and other tarsi separate it abruptly from that species and its allies.

10. *Stenus Traili*, n. sp. (Sect. I. A, Er.) Niger, opacus, dense punctatus, antennarum basi, palpis, pedibusque testaceis, fronte leviter depressâ, fere planâ; antennis distincte clavatis. Long. corp. fere 1½ lin.

Antennæ moderately long, rather slender; joints 3—6 yellowish, the others nearly black; 1st and 2nd joints stout, 3—6 slender and elongate, each a little shorter than its predecessor; 7th joint much broader than 6th, 8th smaller than the contiguous ones, 9th and 10th stout, but each longer than broad; 11th joint small, shorter than 10th. Palpi only moderately long, quite yellow. Head almost as broad as the elytra; the space between the eyes rather depressed, but almost even, very obsoletely bisulcate, evenly and densely punctured. Thorax rather longer than broad, a good deal narrower than the elytra; the sides much rounded in front of the middle, and a good deal constricted behind; it is densely and rugosely punctured and not shining. Elytra a little longer than the thorax, densely and coarsely punctured, quite dull. Hind body finely but distinctly margined, much acuminate, closely punctured; the punctures moderately coarse on the basal segments, quite fine on the penultimate one, 2—4 each with a well-marked carina on the middle of the basal part, and a much shorter one on each side. Legs yellow; tarsi long and slender, the basal joint of the hind one as long as the three following joints together.

In the male there is a moderately large excision at the extremity of the ventral plate of the 7th segment; the 6th is flattened and slightly depressed along the middle, finely punctured and very delicately pubescent, and its hind margin is a little emarginate; the hind margin of the 5th segment is obscurely emarginate.

Ananá; a single ♂ found by Dr. Trail on 6th September, 1874.

11. *Stenus pedator*, n. sp. (Sect. II. A, Er.) Niger, dense punctatus, subopacus, palpis, pedibus, antennisque testaceis, his apice nigricantibus; capite elytris fere latiore, fronte sat excavatâ; abdomine fortiter, minus crebre punctato, subnitido. Long. corp. 2 lin.

Antennæ long, slender, yellow, with the three or four apical joints blackish; 3rd joint elongate, twice as long as 2nd, and a good deal longer than the 4th; 7th and 8th joints slender and elongate, scarcely at all thicker than the preceding ones, 9—11 also slender and elongate, but distinctly stouter than the others; 11th almost as long but scarcely so broad as 10th. Palpi elongate, pale yellow. Head with the eyes very large, a little broader than the elytra; the space between the eyes is distinctly depressed, but obsoletely bisulcate, rather coarsely but not evenly punctured, with a small, shining, smooth space at the vertex in the middle. Thorax a good deal narrower than the elytra, a little longer than broad; the sides a good deal rounded in front, and distinctly narrowed behind the middle; it is coarsely, very densely and quite rugosely punctured, so as not to be shining. Elytra broad, scarcely longer than the thorax, very coarsely, densely and rugosely punctured, not shining. Hind body rather slender, with the sides finely but distinctly margined; it is rather coarsely and distinctly and not closely punctured; it is distinctly shining, and there are no carinæ in the impressions on the base of the segments. The legs are yellow, the tarsi elongate; the hind tarsus has the basal joint very long, quite as long as the three following together; the 2nd joint is also elongate, and about half the length of the basal one, the lobes of the 4th joint are elongate and slender. The under surface is shining and coarsely punctured.

In the male the femora are rather stout, and the hind tibiæ at their apex are a little incrassate, and with a minute

tooth or tubercle on the inside; the ventral plate of the 7th segment has a rather large notch, the 6th is flattened along the middle, and finely but sparingly pubescent on the flat part, and has the hind margin a little emarginate.

Rio Purus; a single male, captured by Dr. Trail on the 25th October, 1874.

12. *Stenus ventralis*, n. sp. (Sect. II. B, Er.) Elongatus, plumbeo-niger, sat nitidus, albido-pubescens, antennis, palpis, pedibusque pallide flavis; thorace elytrisque crebre fortiter punctatis, his thoracis longitudine; abdomine parcius subtiliter punctato. Long. corp. $2\frac{1}{3}$ lin.

Antennæ pale yellow, elongate and slender, longer than head and thorax; 3rd joint more than twice as long as 2nd, and a good deal longer than 4th; joints of the club elongate and slender. Palpi pale yellow, elongate. Head fully as broad as the elytra, slightly depressed between the eyes, the central part very indistinctly elevated; the punctuation moderately fine, not dense, rather more sparing about the middle. Thorax a good deal longer than broad, subcylindric, but distinctly broader in the middle than at the extremities; the surface closely and rather coarsely punctured. Elytra just about as long as the thorax, but a good deal broader; the shoulders distinct, the sides slightly curved; the punctuation rather coarse, a little coarser than on the thorax, rather close. Hind body elongate and cylindrical, the basal segment finely margined, each segment with a long white pubescence, which is most distinct on its basal portion; the basal segments finely but distinctly, rather sparingly punctured, the apical ones quite finely and sparingly. Legs pale yellow, elongate, rather slender, the lobes of the tarsi broad.

In the male, on the underside, the 7th segment of the hind body bears a deep, narrow notch; the 6th is more closely punctured and pubescent along the middle than at the sides; the 5th is depressed along the middle before the apex, the depression impunctate but scarcely shining; the 4th and 3rd have similar but not such deep depressions, while the basal one is smooth and shining in the middle at the extremity.

Tapajos; one male, one female.

13. *Stenus extensus*, n. sp. (Sect. II. B, Er.) Elongatus, plumbeo-niger, sat nitidus, albido-pubescens, anten-

nis, palpis, pedibusque pallide flavis; thorace crebre sat fortiter punctato, medio carinâ. angustâ; elytris thoracis longitudine, crebre fortiter punctatis; abdomine obsolete punctato. Long. corp. 2⅓ lin.

Antennæ pale yellow, elongate and slender, longer than head and thorax; 3rd joint more than twice as long as 2nd, and a good deal longer than 4th. Head about as broad as the elytra; the front not excavate, but a little depressed on either side between the eyes and the middle part, which is shining and impunctate. Thorax a good deal narrower than the elytra, much longer than broad, cylindric, the sides nearly straight, a little narrowed towards the base and slightly towards the front; moderately coarsely and closely punctured, with an abbreviated, shining, narrow space along the middle. Elytra about as long as the thorax, rather coarsely punctured, the punctuation moderately close; the shoulders but little prominent. Hind body elongate, the basal segment margined finely, each segment only obscurely constricted at the base; quite obscurely punctured, with a distinct, silvery, depressed, long pubescence; its under surface finely and sparingly punctured. Legs very pale yellow, elongate and slender; the lobes of the tarsi broad.

Tapajos; a single female.

*Obs.*—This species bears an extreme resemblance to *S. ventralis*, but is undoubtedly distinct; *S. extensus* is rather the more slender of the two, and has the thorax more cylindric and distinctly carinated along the middle; it is best distinguished, however, by the punctuation of the hind body, which is finer than in *S. ventralis*, a difference which is very easily perceived when the undersides are compared.

14. *Stenus genalis*, n. sp. (Sect. II. B, Er.) Elongatus, angustus, niger, metallescens, antennis, palpis, pedibusque pallide flavis; fronte planâ, thorace cylindrico, dense punctato, fere opaco; elytris thoracis longitudine, dense fortiterque punctatis; abdomine crebre fortiterque punctato, fere nudo. Long. corp. 2½ lin.

Blackish, with a leaden-green tinge. Antennæ elongate and slender, yellow; palpi pale yellow. Head broad, quite as broad as the elytra; the space between the eyes broad,

flat, and scarcely depressed below the margin of the eyes; densely, evenly and rather coarsely punctured; on the underside the genæ are very broad and very densely and coarsely punctured. Thorax greatly narrower than the elytra, nearly twice as long as broad, cylindric, the sides not at all rounded, deeply, very densely and rather coarsely punctured, the punctuation rather coarser at the basal margin than at the front. Elytra narrow, but with the shoulders well marked and prominent, densely, deeply and coarsely punctured; behind the scutellum depressed, and the punctuation there rather finer and denser; that towards the hind margin rather coarser and more sparing, so that that part is more shining than the base. Hind body elongate and narrow; the segments closely and rather coarsely punctured, the 6th smooth towards the hind margin, the 7th sparingly and obsoletely punctured. Legs pale yellow, the tarsi moderately slender.

The male has a very deep excision on the ventral plate of the 7th segment; the 6th is broadly impressed along the middle, and there extremely finely and densely punctured, and bearing a fine, pale pubescence, and its hind margin is a little cut away in the middle; the 5th segment is more finely punctured along the middle than elsewhere.

Pará and Tapajos; several specimens.

15. *Stenus Paræ*, n. sp. (Sect. II. B, Er.) Elongatus, angustus, niger, leviter metallescens, antennis, palpis, pedibusque pallide flavis; thorace dense fortiterque punctato; elytris thoracis longitudine, fortiter punctatis, nitidulis; abdomine fortiter, minus crebre punctato. Long. corp. $2\frac{1}{3}$ lin.

Head quite as broad as the elytra, the front closely and coarsely punctured, but still shining, a little depressed in the middle. Thorax much longer than broad, a good deal narrower than the elytra: the sides only slightly narrowed towards the front, but distinctly contracted behind the middle; densely covered with a coarse, almost rugose punctuation, but with the interstices distinctly shining. Elytra about as long as the thorax, with the shoulders not very prominent, covered with a coarse punctuation, which becomes more sparing towards the hind margin, where, however, it is still quite distinct, the interstices quite shining. Hind body slender and cylindric, the three or

four basal segments rather coarsely and closely, but not densely punctured; almost without pubescence. The punctuation of the metasternum coarse.

Pará; a single female, collected by Mr. Smith.

*Obs.*—Though this species is closely allied to *S. genalis*, it is undoubtedly quite distinct, the sculpture being considerably coarser and more sparing.

16. *Stenus nigricans*, n. sp. (Sect. II. B, Er.) Elongatus, angustus, niger, nitidus, antennis, palpis, pedibusque flavis; prothorace subcylindrico, dense punctato; elytris thoracis longitudine, crebre fortiter punctatis; abdomine fortiter crebre punctato. Long. corp. $2\frac{1}{3}$ lin.

Antennæ yellow, long and slender, the three apical joints distinctly incrassate. Palpi elongate, yellow. Head even broader than the elytra, the space between the eyes a little depressed, almost flat, the middle being very obsoletely elevated; it is black and shining, moderately coarsely and not densely punctured. Thorax a good deal narrower than the elytra, much longer than broad, distinctly rounded at the sides, so that it is slightly narrowed both in front and behind; it is covered with a dense, rather coarse, almost rugose punctuation. Elytra scarcely so long as the thorax, narrow, the shoulders not very prominent; they are black and shining, coarsely punctured, the punctuation at the base dense, more sparing at the apex; at the extreme base is some delicate white pubescence. Hind body cylindric, slender, only the basal segment margined, the four basal segments rather coarsely punctured, and with a white pubescence at the extreme base of each. Legs clear yellow.

The male has a broad and deep excision on the ventral plate of the 7th segment of the hind body; the 6th segment is a little depressed near the hind margin, and there finely punctured, the hind margin being distinctly emarginate.

Pará; two individuals (♂ and ♀), collected by Mr. Smith.

*Obs.*—This species bears a great resemblance to *S. excisus* and *S. Paræ;* but it is more slender than *S. excisus*, and has the elytra more closely punctured, and the punctuation of the hind body considerably coarser. It is rather smaller than *S. Paræ*, is blacker, and more finely punctured, and has the pubescence at the base of the abdominal segments distinct.

17. *Stenus excisus*, n. sp. (Sect. II. B, Er.) Elongatus, angustus, niger, nitidus, pedibus, palpis, antennisque pallide flavis, his apice fuscis; prothorace subcylindrico, sed medio distincte dilatato; elytris hoc vix longioribus, fortiter punctatis, apice fere lævigatis; abdomine minus fortiter punctato, segmentis singulis basi albido-pubescentibus. Long. corp. $2\frac{1}{8}$ lin.

Antennæ slender and elongate, quite as long as head and thorax, pale yellow, with the three or four apical joints infuscate, the three apical ones distinctly thickened; 3rd joint more than twice as long as 2nd. Head with the eyes almost broader than the elytra; the space between the eyes slightly depressed, almost even, rather coarsely and closely punctured, yet distinctly shining. Thorax elongate and narrow, yet distinctly contracted behind the middle, so that the sides in the middle appear a little prominent; it is also slightly narrowed towards the front; it is densely and coarsely punctured and yet shining. The elytra are rather narrow; they are scarcely longer than the thorax, their sides are a little rounded, the humeral angles quite prominent; they are coarsely and not closely punctured and shining, the punctures being fine and sparing at the hind margin; at the extreme base is a distinct white pubescence. The hind body is slender and cylindric, with only the basal segment margined; the four basal segments are distinctly, but not coarsely nor densely punctured, the apical ones obsoletely punctured; each segment has at the extreme base a distinct, whitish pubescence. The legs are long and slender, very pale yellow; the tarsal lobes elongate and slender.

In the male the ventral plate of the 7th segment has a very broad and deep incision; the 6th segment is a little flattened towards the extremity and finely punctured, and with a fine, pale pubescence; its hind margin is a little emarginate.

A single male was found by Dr. Trail on the 5th November, 1874, but no special locality has been sent me.

18. *Stenus laticeps*, n. sp. (Sect. II. B, Er.) Niger, subnudus, antennis, palpis, pedibusque testaceis; fronte leviter depressâ, fortiter punctatâ, medio glabrâ; thorace cylindrico, dense fortiter, profundeque punctato; elytris latis, fortiter crebre punctatis, nitidulis; abdomine crebre fortiter punctato. Long. corp. $2\frac{1}{4}$ lin.

Antennæ yellow, elongate and slender; 3rd and 4th joints of about the same length. Palpi pale yellow. Head broad and short, about as broad as the elytra; the eyes separated by a broad space, which is distinctly depressed, and closely and coarsely punctured, but in the middle the punctures become sparing, so as to leave an irregular longitudinal shining space; on the underside the genæ are very broad, and densely and coarsely punctured. Thorax much longer than broad, greatly narrower than the elytra, subcylindric; very slightly rounded at the sides, very densely, coarsely and deeply punctured, so that the interstices are rugose and very narrow. Elytra about as long as the thorax, broad, outstanding, the humeral angles strongly marked; the surface coarsely and deeply punctured, the punctures rather close, but the interstices broad and shining. Hind body cylindric and elongate; the segments coarsely and closely punctured, the 6th towards the extremity sparingly and finely, the 7th obsoletely punctured. Legs yellow, elongate, moderately stout; the knees reddish.

Pará; a single female.

*Obs.*—This species, as well as *S. genalis*, is remarkable from the broad, very densely and coarsely punctured genæ.

19. *Stenus tricolor*, n. sp. (Sect. II. B, Er.) Elongatus, angustulus, nitidus, viridi-æneus, abdomine rufo-testaceo, apice abrupte nigro; antennis rufis, basi cum palpis pedibusque flavis. Long. corp. $2\frac{1}{2}$ lin.

Antennæ elongate and slender, pale yellow at the base, darker towards the apex; palpi pale yellow. Head broad, not excavate, but the middle slightly elevated, and between this and the eye with a small depression on either side; the antennal tubercles elongate, the punctuation sparing and irregular. Thorax longer than broad, narrower than the elytra, subcylindric, but distinctly broadest in the middle, and the basal portion slightly contracted; shining, rather coarsely and not sparingly punctured, the basal portion with a smooth space along the middle. Elytra slightly longer than the thorax, rather narrow and elongate; the shoulders rectangular and sharply marked; the colour shining-green like the thorax; the punctuation coarse, moderately close. Hind body elongate, slender and cylindric; reddish, shining; the basal segment distinctly, the

others obsoletely punctured, the 7th and 8th quite black; segments 3—5 a little constricted at the base. Legs yellow, rather long; lobes of tarsi strongly developed.

In the male, on the underside, the segments of the hind body are each flattened on the middle, and the 7th bears a very deep and rather broad notch.

Of this elegant species only a single male was found at Tapajos.

20. *Stenus heres*, n. sp. (Sect. II. B, Er.) Niger, sat nitidus, antennis, palpis, pedibusque testaceis, his geniculis, illis clavâ, infuscatis; prothorace subcylindrico, dense fortiterque punctato; elytris dense fortiterque punctatis, thorace longioribus; abdomine crebre fortiter, apicem versus subtiliter, punctato. Long. corp. 1½ lin.

Antennæ elongate, yellow, with the club nearly black; 3rd joint distinctly longer than 4th. Palpi yellow. Head broad, about as broad as the elytra, rather coarsely punctured; the middle longitudinally a little elevated, and between this and the eyes a small depression on each side. Thorax longer than broad, much narrower than the elytra, subcylindric, but the sides a little curved and slightly contracted towards the base; very densely and coarsely punctured, so as to be rugose. Elytra elongate and outstanding, much broader than the thorax; the shoulders well marked and rectangular, very coarsely and closely punctured, but the interstices quite broad enough to be shining. Hind body cylindric, rather coarsely and closely punctured, very finely and very scantily pubescent; segments 3—5 much constricted near the base. Legs yellow; the base of the tibiæ and the apical portion of the femora broadly infuscate; lobes of the tarsi long; punctuation of metasternum and under face of hind body very coarse; genæ rather coarsely but not densely punctured.

Ega; a single individual, which I believe to be a female.

21. *Stenus cerritus*, n. sp. (Sect. II. B, Er.) Æneoniger, nitidulus, parcius albido-pubescens, fortiter profundeque punctatus, antennis pedibusque testaceis, palpis pallide flavis; abdomine parcius sat fortiter punctato. Long. corp. 2½ lin.

Antennæ yellow, elongate; 3rd joint much longer than 4th, club elongate, 10th joint twice as long as broad

Palpi elongate, very pale yellow. Head with the eyes large, rather smaller than the elytra, distinctly excavate; at the bottom of the excavation with a smooth, carina-like space. Thorax much longer than broad, subcylindric, but distinctly narrowed towards the front, and a little towards the base; shining brassy, with fine, pale hairs; coarsely, deeply and rather closely punctured. Elytra quite as long as the thorax, with the shoulders well marked and prominent; coarsely, deeply and closely punctured, shining brassy, with a fine, pale, scanty pubescence. Hind body cylindrical, not margined, shining, sparingly, moderately coarsely punctured, with a fine, pale, elongate pubescence. Legs yellow, rather long; 4th joint of tarsi bilobed, the lobes rather long and narrow.

The male characters are extraordinary: the hind legs are deformed; the femora are incrassate, the lower margin thickened near the middle, abruptly contracted near the base; the tibiæ are also thickened, and furnished near the middle with an angular prominence on their inner face, and below this prominence the inner face is partly sliced off; the basal joint of the tarsus is also distinctly dilated. On the underside of the hind body the basal segment has the hind margin thickened in the middle, but much emarginate, so as to form a broad notch, with rather prominent edges; the next segment has a smaller but shining notch, the 4th and 5th segments are also shining in the middle, in front of the hind margin; the 6th is broadly emarginate, and the 7th is emarginate at the extremity, the emargination being continued forwards as a narrow, deep fissure.

Tapajos; one male, two female individuals.

22. *Stenus Batesi*, n. sp. Plumbeo-niger, breviter albido-pubescens, dense punctatus; antennis palpisque testaceis, illis apice infuscatis; pedibus fuscis, tibiarum basi testaceo; capite coleopteris multo angustiore, bisulcato, crebre punctato; prothorace maculâ medio lævi; elytris thorace longioribus, dense fortiterque punctatis; abdomine elongato-conico, dense punctato. Long. corp. fere 2 lin.

Antennæ moderately long, and rather stout, dark yellow; the club, which is long in proportion to the other part, more obscure. Head rather small, much narrower than the elytra, not excavate, but with a small space on the middle elevated, and a depression on either side of this; rather

closely punctured, except on the elevation. Thorax rather longer than broad, much narrower than the elytra, the basal portion distinctly contracted, and the sides narrowed towards the front; the surface closely and moderately coarsely punctured, with a small spot behind the middle free from punctures. Elytra largely developed, much longer and broader than the thorax, slightly depressed within the prominent shoulders, rounded and contracted towards the extremity, densely and coarsely punctured. Hind body broad at the base, and gradually narrowed towards the extremity; rather closely and moderately coarsely punctured, with a fine, distinct, depressed pubescence. Legs pitchy, the base of the tibiæ yellow; tarsi pitchy-yellow, slightly paler at the base. Genæ rather sparingly punctured.

The male has a very broad notch at the extremity of the 7th segment; the 6th segment is flat along the middle, and finely pubescent, scarcely emarginate at the hind margin.

Tapajos; a single male.

23. *Stenus collaris*, n. sp. (Sect. II. B, Er.) Niger, nitidus, glaber, antennarum basi, palpis pedibusque rufescentibus; fronte areâ mediâ latâ lævi; prothorace medio ampliato, fortiter sat crebre punctato, disco lævi; elytris fortiter sat crebre punctatis. Long. corp. fere 2 lin.

Antennæ only moderately long, pitchy, with the two basal joints yellow, and the following ones intermediate in colour; 3rd joint a good deal longer than 4th. Palpi elongate, yellow, the last joint dusky yellow. Head broad, but narrower than the elytra, only sparingly punctured, a broad space in the middle being quite smooth and even, outside this the punctures are but sparing; the front is not excavate, but there is an impression on each side of the smooth central place; the antennal tubercles are very small. Thorax about as long as broad, much narrower than the elytra, a good deal broader in the middle than at the front and base; coarsely but rather sparingly punctured, the punctures most numerous near the front margin; a broad space on the middle impunctate. Elytra broad, the shoulders prominent, rather longer than the thorax, coarsely but sparingly punctured. Hind body broad at the base, but much narrowed towards the extremity; segments 2—5 transversely depressed near the base in the middle, and a little contracted at the sides; rather

sparingly but coarsely punctured, the apical segments with only sparing and fine punctures. Legs dark yellow; tarsi rather long, with the lobes broad. Genæ coarsely and rather closely punctured; underside of hind body very coarsely punctured.

Tapajos; a single individual, which is I believe a female.

24. *Stenus parviceps*, n. sp. (Sect. II. B, Er.) Niger, nitidus, supra parcius albido-pubescens, antennis palpisque testaceis, illarum clavâ obscuriore; pedibus infuscato-rufis, femoribus tibiisque basi quam apice dilutioribus; capite thorace vix latiore, bisulcato; elytris thorace longioribus, crebre fortiter punctatis; abdomine apicem versus angustato, crebre fortiter punctato. Long. corp. 2 lin.

Antennæ moderately long, yellow, with the club darker; 3rd joint a good deal longer than 4th. Palpi yellow, the apical joint darker than the preceding one. Head much narrower than the elytra, and scarcely broader than the thorax, not excavate, but distinctly bisulcate; the surface irregularly punctured, as when viewed from the front, the middle and some spaces near the eyes appear like shining spots. Thorax scarcely longer than broad, greatly narrower than the elytra, the sides not rounded but a little narrower at the base than in front; the surface coarsely, moderately closely punctured, the punctures absent from a very small space behind the middle. Elytra much longer and broader than the thorax, the shoulders rectangular and a little elevated, coarsely and closely but not densely punctured. Hind body a good deal narrowed towards the extremity, rather coarsely punctured; the punctures on the apical segments much finer than at the base, the punctures rather close, the pubescence very fine and scanty. Base of femora reddish, extremity infuscate; front coxæ reddish, hind ones pitchy; tibiæ yellowish, infuscate towards the extremity; tarsi infuscate-yellow: under surface deeply, coarsely and densely punctured, opaque and with the white pubescence elongate and conspicuous.

The male on the underside exhibits a notch at the extremity of the 7th segment; it is, however, much concealed by the dense, fine, elongate, pale pubescence, which covers the middle of the segment; the 6th segment is also densely pubescent along the middle, and its hind margin is slightly notched at the extremity.

Amazons; a single individual, without more special locality.

*Obs.*—I have also a specimen from Ega, which I believe to be merely a variety of this species; the chief difference it exhibits from the individual above described consists in the absence of any smooth space on the thorax.

25. *Stenus proximus*, n. sp. (Sect. II. B, Er.) Niger, supra nitidus, parcius albido-pubescens, antennis palpisque testaceis, apice infuscatis; pedibus infuscato-rufis, femoribus tibiisque basi quam apice dilutioribus; capite thorace vix latiore, bi-impresso; elytris thorace longioribus, crebre fortiter punctatis; abdomine crebre fortiter punctato. Long. corp. $1\frac{1}{3}$ lin.

Antennæ reddish with the club, dusky; palpi yellow, but with the front half of the last joint distinctly darker. Head small, not excavate, with two impressions between the eyes, which can scarcely be called sulci, as they do not reach the vertex, and are also abbreviated in front by the well-marked antennal tubercles; only sparingly punctured, the more elevated portions appearing as smooth spaces. Thorax much narrower than the elytra, rather longer than broad, slightly curved at the sides towards the front, coarsely and rather closely somewhat irregularly punctured. Elytra longer than the thorax, distinctly impressed within the prominent shoulders, coarsely but not closely punctured. Hind body rather coarsely and moderately closely punctured, much more finely at the extremity than on the basal segments.

Amazons (probably Tapajos`; a single male.

*Obs.*—This species is excessively closely allied to *S. parviceps*, and differs therefrom only in slight characters; it is a little smaller than *S. parviceps*, and has the antennæ distinctly shorter; the sulci on the head are less distinct, being more fovea-like; the thorax is slightly narrower, the elytra are rather shorter and rather more coarsely and less closely punctured; the punctuation of the hind body is not quite so coarse and deep. The male characters seem scarcely to differ.

### Megalops.

Many points of the structure of these remarkable insects remain to be ascertained, before the position and affinities of the species can be satisfactorily decided on. Erichson

describes the antennæ as ten-jointed. I find them, however, to be certainly eleven-jointed, the basal joint being short and very stout, and much concealed by the prominence above its point of insertion. Erichson has also described the tarsi as five-jointed, and the 4th joint to be minute. On inspection, however, the tarsi appear at first to be only four-jointed, but a more careful examination reveals the fact that the tarsi are really five-jointed, and that the 4th joint is not minute, but consists of a very small basal and articular portion, to which are attached two long slender lobes, which are so closely applied to the 5th joint as only to be detected by bending or lifting up the terminal joint.

Nothing is known as to the structure of the labrum, which is quite invisible in the species. It is probable, however, that it is concealed under the largely-developed horny clypeus, and that it is moveable; and that the two long spines which appear to proceed from the front of the clypeus are in reality appendages from the labrum. The sexual characters have hitherto escaped observation. I have pointed them out in the following description of *M. spinosus*, but should add that, though in *M. spinosus* the antennæ are similarly formed in the two sexes, in some of the other species there is a remarkable sexual disparity in the structure of the apical joints.

Seven species of the genus have already been described: two from Northern America, three from South America, one from Australia and one from South Africa. The species, however, are undoubtedly more numerous in South America than elsewhere, for I have thirteen species from thence in my collection, while the only other species I have seen is the Australian one.

1. *Megalops spinosus*, n. sp. Niger, nitidus, antennis pedibusque testaceis, illis clavâ fuscâ; thorace transversim quadrisulcato, sulco secundo medio vix, tertio sat late, interrupto; elytris ante medium striolâ obliquâ impressâ. Long. corp. 2 lin.

Antennæ yellow, darker towards the extremity, with the club fuscous; 3rd joint twice as long as 2nd, 4th about as long as 2nd; 5—7 each shorter than its predecessor; 8th small, 9th a good deal broader than 8th, bead-like; 10th rather strongly transverse, 11th moderately large, slightly broader than 10th, as long as 9th and 10th

together, obtusely pointed. Palpi yellow. Head broad; the eyes very large, even broader than the elytra; the clypeus armed in front with two very elongate, pitchy-yellow spines, which are ciliated internally, the horny clypeus deeply impressed and separated by a straight depressed line from the front; the front with elevations and depressions so placed as to form a central elevated space, surrounded, except at the summit in the middle, by a broad, irregular depression; also with a fine depression along the inner margin of the eyes, in which are a few punctures. Thorax broad, with four transverse furrows in which are large punctures; the first of these grooves is placed near the front margin, whose course it follows; the second extends in a nearly straight line across the thorax, so that it is nearer to the front one at the sides than in the middle,—it can scarcely be said to be interrupted in the middle; the third furrow is the broadest and is distinctly interrupted in the middle, the hinder one is placed close to the base; the sides appear a little waved and have two angular projections near the front. Scutellum emarginate-truncate at the apex, bearing two foveæ. Elytra broad, broader than long, about as long as the thorax, deeply impressed at the base for the thorax; each near the shoulder with an oblique stria, sharply limited on the inner but not on the outer side. Legs yellow; coxæ castaneous.

Ega; two specimens, both of which appear to be females.

*Obs.*—Besides the two females above described, I have also two males of this species, which I obtained from the collection of Mr. E. W. Janson, where they were labelled, "Pará, Brazil." These two males have the ventral plate of the 7th segment of the hind body slightly emarginate on each side the middle at the extremity; and the preceding segments are slightly flattened along the middle, and furnished there with a very fine and scanty short pubescence. The structure of the antennæ is quite the same as in the females.

2. *Megalops impressus*, n. sp. Niger, nitidus, antennis pedibusque testaceis, illis clavâ fuscâ; thorace grosse punctato, minus distincte sulcato; elytris disco striolâ profundâ impressâ. Long. corp. $1\frac{2}{3}$ lin.

Antennæ with the two basal joints yellow, the others

more obscure; joints 6—8 small, 9th transverse, 10th much broader than 9th, strongly transverse, 11th rounded, rather large. Palpi yellow; clypeus with two elongate spines, its front with an emargination on each side. Head broad and short, with impressions placed much as in *M. spinosus*, but the depressions formed as it were by confluent punctures. Thorax with very coarse punctures covering the greater part of its surface; a series behind the front margin, a second series separated from the front one by a rather elevated space; along the middle with a third, broad, confused, double series, interrupted in the middle, also with a basal series, and with additional punctures (not extending across the middle) in front of the basal series. Elytra broad and short, the sutural stria very deeply impressed at the base, across the middle with a deep oblique impression, and near the inner edge of this with two obsolete punctures. Hind body with the impressions at the base of the segments large and distinct. Legs yellow; coxæ darker.

Villa Nova; a single female, found under chips.

## Osorius.

About eighteen species of this genus have been described, eight from warm America, one from North America, and the others from the warm parts of the Old World. I here describe seven Amazonian species, and though this seems a considerable addition to the South American species, it is, in comparison with the undescribed species, but small; for I find the specimens of the genus from South America extant in my own collection must be referred to about forty species. The genus is one of excessive difficulty to the student, from the extreme resemblance of the species to one another; and it is not until careful examinations and comparisons are made, that the characters distinguishing the species from one another are seen and appreciated. The structure of the species indicate very sedentary habits; the cohesion or attachment of the different parts of the body together is but slight, so that these insects drop to pieces in our collections with only too great ease. It has been observed that some of the species live in burrows in decaying wood, but it is not indicated whether they follow the borings of other insects, or make the burrows for themselves. The almost complete absence of external characters to distinguish the sexes is worthy of

remark, as is also the simple but peculiar form of the ædeagus, this organ scarcely varying, moreover, in the different species.

1. *Osorius stipes*, n. sp. Niger, sat nitidus, capite coriaceo, subopaco, clypeo antice emarginato, et in medio prominulo; thorace parce punctato, medio breviter canaliculato; elytris strigulosis. Long. corp. 7—8½ lin.

Head with the surface coriaceous, and sprinkled with distinct punctures; the clypeus emarginate in front, so that the anterior angles form blunt projections, but not at all spinose, and also obtusely prominent in the middle; the temples, over and behind the eyes, with coarse distinct rugæ, and some small rough elevations. Thorax much broader than long; the sides much narrowed behind and distinctly sinuate in front of the hind angles, which are distinct and nearly right angles, but a little obtuse; the sides distinctly impressed in front of the hind angles; so as to make the lateral margin appear strongly raised there; the surface entirely coriaceous, but more finely so than the head, and with distinct though sparing punctures, and with a short, fine channel along the middle. Elytra distinctly longer than thorax, entirely covered with shallow irregular rugæ; on the underside the prominence of the prosternum is very marked, the mesosternum distinctly carinate in front of the coxæ. The hind body with very few setæ, the apical segment coarsely strigose, especially at the sides, and with strongly marked tubercles.

Pará, Ega; eight individuals.

*Obs.*—This is the largest species of the genus yet known; the structure of the front of the head readily distinguishes it from *O. ater*.

2. *Osorius nitens*, n. sp. Cylindricus, niger, nitidus, antennis pedibusque piceis; capite pernitido, parce sat fortiter punctato, clypeo utrinque emarginato; thorace nitido, coriaceo, parce fortiter punctato, angulis posterioribus obtusis, minus prominulis; elytris nitidis, rugulosis, et parce obsolete punctatis; abdomine supra lævigato. Long. corp. 5 lin.

Front of clypeus distinctly notched on each side, the lateral angles only slightly more prominent than the middle. Head very shining, and with the front part not in the least coriaceous; the surface sparingly sprinkled with

distinct punctures. Thorax about as long as its breadth at the base; the sides gradually narrowed from the front to the base, and not sinuate in front of the hind angles; the base distinctly curved near the hind angles, so that these are obtuse, the lateral margin strongly raised on its posterior half; the surface coriaceous, but shining, sprinkled with distinct punctures, with a very short indistinct channel on the middle. Elytra slightly longer than the thorax, shining, but distinctly rugulose, and with some rather coarse, but obsolete punctures. Hind body above shining, and with one or two setigerous punctures on each segment; its under surface with rather coarse, sparing, setigerous punctures; hind portion of the apical segment sparingly punctured, but longitudinally smooth along the middle.

St. Paulo; two individuals.

3. *Osorius simplex*, n. sp. Cylindricus, nitidus, nigropiceus, pedibus rufescentibus; capite parce sat fortiter punctato, clypeo antice subtruncato, angulis prominulis; prothorace parce punctato, angulis posterioribus obtusis; elytris subrugulosis et parce obsolete punctatis; abdomine supra lævigato. Long. corp. 4½ lin.

Clypeus almost straight in the middle in front, but with the angles thick and prominent, but not at all spinose. Head shining, rather sparingly but distinctly punctured, the antennal tubercles well marked, and the eyes distinctly prominent; the punctures are wanting in front of the vertex, and are wanting about an irregular longitudinal space along the middle. Thorax slightly longer than it is broad at the base, a little narrowed from the front to the base; the surface shining, sprinkled with punctures like the head, indistinctly channelled along the middle; the hind angles distinctly obtuse, but not far from right angles. Elytra a little longer than the thorax, shining, with indistinct rugulose impressions and elongate punctures. Hind body shining, rather slender, impunctate above; on the underside the 7th segment bears a large smooth impression in the middle at the extremity, on each side of which it is sparingly sculptured, and furnished with scanty hairs, the punctures quite at the side forming obscure distant rugæ; the 6th segment coarsely punctured, the punctures rather close on the middle; the preceding segments also with coarse punctures on the middle.

Ega; a single male.

*Obs.*—This species is closely allied to *O. nitens*, but is rather smaller and distinctly more slender; the clypeus is not prominent in the middle, and the antennal tubercles are more distinct; it is possible that the paler colour may be only the result of the immaturity of the individual described.

4. *Osorius integer*, n. sp. Niger, nitidus, capite thoraceque crebre, fortiter punctatis, illo clypeo antice emarginato, hoc angulis posterioribus subrectis; elytris haud dense punctato-rugulosis; abdomine supra parcius et obsolete punctato. Long. corp. fere 5 lin.

Clypeus emarginate in front, the angles not produced. Head rather coarsely and moderately closely punctured, with a smooth space in front of the finely-punctured vertex; black and shining, not coriaceous. Thorax about as long as it is broad at the base, only a little narrowed from the front to the base; the hind angles distinctly obtuse, but not far from right angles; the surface shining black, rather coarsely and not very sparingly punctured, and with traces of a short channel on the middle. Elytra a little longer than the thorax, shining, with a distinct but neither dense nor deep sculpture, consisting of indefinite rugæ, and sparing, ill-defined, elongate punctures. Hind body black; above sparingly sprinkled with obsolete punctures, beneath with the 7th segment in the middle coarsely punctured, and bearing a fine elongate pubescence, the punctures at the sides more sparing, but coarse, and passing into shallow rugæ; 6th segment coarsely punctured about the middle, and the preceding segments also with some coarse punctures about the middle.

Ega; a single male.

*Obs.*—This species at first sight exactly resembles *O. nitens*, but the clypeus is not prominent in the middle; the head and thorax are more distinctly punctured, and the punctuation of the hind body is different.

5. *Osorius solidus*, n. sp. Cylindricus, nitidus, piceus, antennis pedibusque rufis; capite thoraceque fortiter punctatis, hoc angulis posterioribus rotundato-obtusis; elytris fortiter punctatis, nitidulis; abdomine parce obsoleteque punctato. Long. corp. 4 lin.

A rather narrow and parallel species. Mandibles bidentate, the upper tooth on the right one very large. Clypeus

with the front angles distinctly prominent; surface of head shining, rather coarsely punctured, with a smooth space in front of the vertex; over the eyes the punctures become strigose. Thorax about as long as it is broad in front; the sides gently narrowed to the base, the angles obtuse, and, owing to the base being distinctly curved near the angles, appearing somewhat rounded; the surface shining, rather coarsely and not very sparingly punctured. Elytra scarcely longer than the thorax, shining, with rather coarse, elongate, distinct punctures. Hind body above with a few obsolete punctures, which are most numerous and most visible on the 6th and 7th segments; these segments are besides very finely strigose, so as not to be shining. The sculpture of the ventral plate of the 7th segment similar to that on the dorsal plate, viz., some coarse but obsolete, sparing, elongate punctures, the surface besides being finely and densely strigose, so as to be opaque; the 6th segment beneath is also scarcely shining, and with some coarse, scattered punctures. Mesosternum strongly carinate.

St. Paulo; a single individual, which I consider to be a female.

*Obs.*—This species is remarkable by reason of the comparative large development of the upper tooth on the right mandible.

6. *Osorius affinis*, n. sp. Angustulus, nigro-piceus, antennis pedibusque rufis; clypeo antice subtruncato; capite thoraceque coriaceis, subnitidis, sat fortiter punctatis, hoc angulis posterioribus obtusis; elytris minus discrete punctatis; abdomine segmentis 6° et 7° minus profunde punctatis. Long. corp. $3\frac{2}{3}$ lin.

Head rather small, with the eyes distinctly convex; the clypeus nearly truncate in front, the antennal tubercles distinct; the surface distinctly coriaceous, so as to be but little shining, with coarse but shallow, elongate punctures, which pass into rugæ over the eyes, and are wanting in front of the vertex. Thorax about as long as it is broad in front, the lateral margin fine throughout; the sides gently narrowed towards the base, slightly sinuate in front of the hind angles, which are therefore distinct, and are obtuse; the surface coriaceous, and sprinkled with rather

coarse but obsolete punctures. Elytra shining, rather sparingly sprinkled with ill-defined, somewhat coarse punctures. Hind body shining above; the 6th and 7th segments with shallow, rather sparing punctures; sculpture of the 7th segment on the under side almost similar to that of the upper side; 6th with sparing coarse punctures. Legs reddish, with the femora pitchy red.

St. Paulo; a single individual, which I consider to be a female.

*Obs.*—This species is closely allied to *O. solidus*, and has the mandibles similarly formed, but is readily distinguished by the different sculpture.

7. *Osorius oculatus*, n. sp. Piceus, cylindricus, antennis pedibusque rufis, oculis majoribus, prominulis; capite, thorace, elytrisque fortiter sat crebre punctatis, nitidulis; abdomine dense asperato-punctato, opaco. Long. corp. $2\frac{1}{8}$ lin.

Antennæ red; 7th joint abruptly larger than the preceding ones. Clypeus nearly straight in front, the angles very slightly prominent; surface of head shining, coarsely punctured, the punctures wanting along the middle and at the vertex. Thorax about as long as broad, coarsely, deeply and rather closely punctured, with a sharply-defined longitudinal space along the middle impunctate; the sides slightly narrowed from the front to behind the middle, and thence more abruptly to the base; the lateral margin very fine, the hind angles obtuse and indistinct. Elytra rather longer than the thorax, coarsely and moderately closely and deeply punctured. Hind body above densely punctured, and with a distinct, rough, pale pubescence; beneath coarsely punctured, but more sparingly than on the upper side, and therefore more shining. Legs red; hind tibiæ slender, bearing three spines.

Ega; three individuals.

*Obs.*—This species at first sight greatly resembles the North American *O. latipes*, but it is considerably smaller, and may be at once distinguished by the larger and more convex eyes. Laporte has described a species about this size from Columbia; but the few words of his description (*Osorius pygmæus*, Etudes Ent. p. 130) are so meagre as to render the identification of his species extremely difficult.

## Holotrochus.

Six species are at present placed under this generic name, five of which inhabit tropical America, the other being found in Madagascar. I here describe six other species; of these the *H. durus* appears to be somewhat allied to the *H. volvulus* figured by Erichson. The species I have described as *H. syntheticus* differs from the *H. durus* by some structural peculiarities, among the more interesting of which is the formation of the apical segments of the hind body. Attention being paid to this character and to the facies of the species an affinity with *Lispinus* is strongly suggested. The other two species, viz., *H. pubescens* and *H. subtilis*, when I first examined them, at once suggested to me a relationship with an insect which has been one of the unsatisfactory ones in the classification of the *Staphylinidæ*, viz., *Phlœocharis subtilissima;* and, on comparing the *H. pubescens* with *P. subtilissima*, I find such a primâ facie resemblance in the structure of the thorax and middle body as to lead me to think that the natural connection of *Phlœocharis subtilissima* will be found to be with this group of *Holotrochus*. Indeed, I may say, the variety of facies and of certain structural characters which exist in *Osorius* and its allies and in these species of *Holotrochus*, suggest to me that the accurate study of these insects will be found to suggest an improved arrangement of some of the *Piestini*, *Oxytelini* and *Phlœocharini;* and I shall not be at all surprised if it be ultimately considered that we have here preserved for us some of the more primitive forms of the *Staphylinidæ*. It will not improbably be suggested that I ought to have established a new genus for *H. syntheticus* and *H. pubescens*, but after the examination of several undescribed intermediate American forms which exist in my collection, I have considered it better not to do so. As regards the two last species here described, viz., *H. clavipes* and *H. Fauveli*, I think it highly probable that they will prove to be closely allied to *Ancœus megacephalus*, Fauvel. In establishing the genus *Ancœus*, M. Fauvel, to distinguish it from the *Oxytelini*, pointed out the hidden and retractile 7th segment of the hind body. The structure of that segment is, however, subject to so much variation both in the *Oxytelini* and *Piestini* (as they are at present limited) that this point throws but little light on the affinities of M. Fauvel's insect. M. Fauvel considered

the *Ancœus megacephalus* to be most allied to *Lispinus*; but the two insects I have described as *H. clavipes* and *H. Fauveli* differ in a highly important respect from the species of *Lispinus*, inasmuch as they have the front coxæ exserted and not covered or separated by any process similar to that which is so conspicuous in *Lispinus*. I must not be understood as implying that the two insects I here allude to will be ultimately considered congeneric with the other *Holotrochi* here described, for I consider that in the present state of our knowledge of these *Staphylinidæ* it is quite impossible for us to decide where there really occur those separations and gaps between species which warrant the formation of genera.

1. *Holotrochus durus*, n. sp. Niger, glaber, nitidus, parce sed distincte punctatus, antennis piceis, pedibus piceo-rufis. Long. corp. $3\frac{1}{2}$ lin.

Mas: abdomine segmentis ventralibus 6 et 7 profunde impressis.

Antennæ stout, shorter than head and thorax, insertion near the front of the eye in a large cavity, greatly overlapped by the side of the clypeus; 1st joint much concealed, and thick, 2nd joint small, 3rd a good deal longer than 2nd, dilated towards the extremity; joints 4—10 transverse, 11th rather narrower than 10th, obtusely pointed; the six basal joints are pitchy, the others red, but this colour is much obscured by the pubescence. Head much narrower than the thorax; clypeus greatly rounded in front; the surface shining and rather finely and sparingly but quite distinctly punctured. Thorax scarcely so long as broad, almost broader than the elytra; the sides a little rounded towards the front, nearly straight behind the front, and thence only very slightly narrowed to the base; the hind angles almost right angles; the surface is shining black, rather sparingly but distinctly punctured; it is transversely convex, the sides margined, the base closely applied to the elytra and not margined; near the hind angles are traces of a longitudinal impression. Elytra slightly longer than the thorax, with a well-marked sutural stria moderately finely and sparingly punctured, with an indistinct longitudinal series of four or five larger punctures along the middle. Hind body with segments 2—5 of equal width, each segment smooth in the middle, obscurely punctured at the sides, less shining than the front

parts of the body. Legs dark reddish. Prosternum prominent, but not carinate in the middle in front; mesosternum with a prominent piece between the middle coxæ, which are therefore distinctly separated; metasternum smooth, shining black, deeply channelled. In the male the ventral plate of the 6th segment bears a large and deep, almost horseshoe-shaped impression, which is surrounded by a kind of margin, and has a peculiar granular pubescence along its sides; the 7th segment bears a similar but more elongate impression, the bottom of which is covered by the peculiar granular pubescence; the apical portion of this segment is produced in the middle as a broad lobe; the punctures on the under face of the hind body in this sex are coarser than in the female.

The female lacks the impressions described above, and the produced lobe of the 7th segment is narrower and more pointed.

Amazons; three females, one male. One of these specimens is indicated as being from Ega.

*Obs.*—The structure of the 8th segment of the hind body and of the ædeagus in this species are peculiar; the dorsal and lateral plates of the former are formed much as in *Osorius*, but each lateral plate bears a pencil of elongate delicate hairs; the ventral plate appears to be altogether absent; the ædeagus is complicated in its structure and laterally asymmetrical, and the missing ventral plate of the 8th segment appears to me to be attached to one side of the ædeagus as a lateral appendage thereof.

2. *Holotrochus syntheticus*, n. sp. Piceus, antennis testaceis, pedibus rufis; capite, thorace, elytrisque pernitidis, glabris, parcius sat fortiter punctatis, thorace versus angulos posteriores acute rectos foveâ magnâ; abdomine apicem versus attenuato, subtiliter pubescente, fere opaco. Long corp. 2—2¼ lin.

Antennæ yellow; 1st joint rather long and stout, not much concealed by the clypeus, 2nd and 3rd joints subequal, rather slender, 4, 5 and 6 small, not differing much from one another, the 6th hardly so long as broad; joints 7—11 much larger than the preceding ones, 7—10 scarcely differing from one another, each distinctly transverse, 11th scarcely so broad as 10th, obtusely pointed. Head small, much smaller than the thorax; the eyes prominent; the clypeus rounded; the surface pitchy, very

shining, rather sparingly but distinctly punctured, the vertex smooth. Thorax strongly transverse, the sides slightly curved, about as broad at the hind as at the front angles; the hind angles sharply-marked right angles, much more elevated than the front ones; the lateral margin very fine; close to each hind angle is a large broad and deep impression; the surface is shining, and it is distinctly, not closely punctured, the punctures are most numerous about the middle, nearly wanting at the sides, and there is a very indistinct longitudinal space along the middle smooth. Elytra much longer than the thorax, very shining, rather coarsely and sparingly punctured, each with a well-marked sutural stria. Hind body elongate, conical cylindric, being much narrowed towards the extremity; the surface nearly opaque, being finely pubescent, and covered with a peculiar obsolete punctuation. Legs reddish, the tibiæ bearing hair-like spines, which are most distinct on the intermediate legs. Prosternum short, with a very fine tubercle in front of the coxæ; mesosternum with a sharply-elevated laminar carina; metasternum with a short, coarse channel, shining, sparingly punctured.

In both sexes the ventral plate is produced at the extremity, so as to form an angular projection; this projection is more elongate and the angle at its extremity more acute in the female than in the male.

Tapajos; five individuals.

*Obs.*—This species departs widely in its facies from *H. durus*, and in the structure of its hind body approaches to *Lispinus*; the dorsal plate of the 8th segment has not the peculiar box-like structure found in *H. durus* and in the species of *Osorius*; the ventral plate appears to be absent as in *H. durus*, the under face of the segment being formed by the folded lateral plates, which are ample, and have quite lost the very hard, spinous character of the same parts in *H. durus*.

3. *Holotrochus pubescens*, n. sp. Ferrugineus, densius pubescens, obsolete punctatus, haud nitidus; prothorace transverso, angulis posterioribus fere acutis. Long. corp. $1\frac{1}{3}$ lin.

Antennæ yellowish, rather short; 1st joint stout and rather long, 2nd joint oval, 3rd joint about as long as 2nd, slender at the base; 4th joint smaller than the others, 5th and 6th about equal, bead-like; 7—11 broader than

the preceding ones, 7—10 rather strongly transverse; 11th joint as broad as the 10th, obtusely pointed. Head much narrower than the thorax, dull reddish; punctuation very indistinct, but with a well-marked, fine, rather long, yellowish pubescence; eyes rather prominent. Thorax as broad as the elytra, rather strongly transverse, very slightly curved at the sides; the front angles more depressed than the hind ones, the base a little emarginate, so that the hind angles project backwards; the surface clothed with a fine, dense pubescence, but with scarcely visible sculpture. Elytra a good deal longer than the thorax, with similar pubescence and obsolete sculpture. Hind body cylindric, scarcely narrowed till the 7th segment, which is very retractile. Legs reddish, the tibiæ with fine spines, which are most distinct on the intermediate legs.

Tapajos; ten individuals.

*Obs.*—Notwithstanding the great difference in appearance between this species and the preceding (*H. syntheticus*), they appear to be structurally closely allied. In certain individuals of *H. pubescens* the ventral plate of the 7th segment of the hind body is somewhat prolonged and acuminate in the middle; judging from what is the case in *H. syntheticus*, I consider these to be females.

4. *Holotrochus subtilis*, n. sp. Ferrugineus, subtiliter sat dense pubescens, subnitidus, obsolete punctatus; prothorace transverso, angulis posterioribus fere acutis. Long. corp. 1¼ lin.

This species is extremely closely allied to *H. pubescens*, but is readily enough distinguished, on comparison, by the much shorter and more inconspicuous pubescence and the less opaque surface; it is also a little smaller, and has the antennæ a little shorter; in other respects it appears scarcely to differ from *H. pubescens*.

Ega; three individuals.

5. *Holotrochus clavipes*, n. sp. Piceus, angustulus, sat nitidus; capite, thorace, elytrisque dense subtilissime longitudinaliter strigosulis, et parce subtiliter punctulatis; capite magno, mandibulis porrectis; thorace basin versus angustato, ad angulos posteriores foveolato; pedibus sordide testaceis. Long. corp. (abdomine extenso) 1½ lin.

Antennæ pitchy, stout, very short; 1st joint concealed by the mode of insertion, joints 2—10 each shorter than broad, 11th joint obtusely pointed, rather lighter in colour,

and scarcely so broad as 10th. Mandibles porrect, conspicuous, crossed in repose. Head elongate; the front angles of the elongate clypeus rounded, the middle slightly emarginate; on each side, near the front, is a large depression; the surface very finely strigose, so as to be but little shining, and with a few fine, distant punctures. Thorax about as long as broad, distinctly narrowed towards the base, but with the sides not curved; the lateral margin excessively fine, and only distinct on the posterior part; close to each hind angle is a rather large, but not sharply defined depression; the hind angles are obtuse, the sculpture of the surface is similar to that of the head, and there is a fine, abbreviated channel along the middle. Elytra rather longer than the thorax, and about as broad as it is at the base, with a well-marked sutural stria; the sculpture similar to that of the head and thorax, but the scattered punctures excessively fine and indistinct. Hind body almost without sculpture. Legs short, pitchy yellow, the hind femora extremely stout, the four basal joints of the tarsi very short. Under surface smooth and without sculpture.

Amazons; a single individual, without indication of any special locality.

6. *Holotrochus Fauveli*, n. sp. Testaceo-castaneus, angustulus, nitidus, glaber; capite magno, mandibulis porrectis; thorace basin versus angustato, ad angulos posteriores foveolato. Long. corp. 1 lin.

Antennæ yellowish, rather short, a good deal of the basal joint exposed; 2nd joint stout, but a good deal more slender than the basal one, 3rd slightly shorter and more slender than 2nd; 4—8 small, differing but little from one another, the 7th and 8th, however, distinctly transverse; 9th and 10th distinctly broader than the preceding ones, rather strongly transverse; 11th obtuse at the extremity. Head elongate, with the mandibles not large but prominent; the clypeus with the front angles rounded and with an impression near these; the eyes small but distinct and rather prominent; the surface almost without sculpture. Thorax about as long as broad, distinctly narrowed behind; the sides slightly sinuate in front of the hind angles, which are nearly right angles, and not rounded; within each is a small impression; the surface almost without sculpture. Elytra longer than the thorax, each with a fine sutural stria, almost without sculpture. Hind body cylindric, with a few upright setæ. Under surface impunctate. Legs short; hind femora incrassate.

Amazons; a single individual without special locality.

I have named this species in honour of M. Albert Fauvel, of Caen, whose labours on the *Staphylinidæ* are well known to all interested in this family of *Coleoptera*.

## Bledius.

The species of this well-known genus here described are seven in number, and suggest no special remark; only one species was found by Mr. Bates, the other six being discovered by Dr. Trail. Only three or four species have been previously described from South America, yet it is very probable that the genus is numerously represented there, for these insects are very retiring in their habits and little likely to come under the notice of collectors, except special search be made for them.

1. *Bledius albidus*, n. sp. Pallide testaceus, obsolete punctatus, subnitidus; capite castaneo, bituberculato. Long. corp. 1½ lin.

Antennæ very pale yellow, slender; basal joint as long as the three or four following ones together; 2nd more than twice as long as 3rd; the four or five apical joints stouter than the others, each of them about as long as broad. Mandibles elongate, their upper edge with a tooth near the base, and beyond the middle with a long spine-like tooth directed forwards and upwards. Head darker than the rest of the insect, castaneous, with the eyes black; the clypeus much deflexed; close to the eye on each side is a prominent tubercle; the punctuation is quite obsolete. Thorax a little narrower than the elytra, not so long as broad, nearly straight at the sides, with the hind corners oblique; it is almost white, except that the fine depressed basal margin is black in the middle; it is extremely finely channelled, and finely and obsoletely punctured. Elytra short, but a little longer than the thorax, pale yellow, finely and indistinctly punctured. Hind body pale yellow, impunctate. Legs very pale yellow; the front tibiæ very broad below the middle, abruptly contracted at the apex.

Jurua; a series of individuals, captured by Dr. Trail on the 3rd November, 1874.

*Obs.*—This very distinct little species can be readily identified by the perpendicular front part of the head. I do not observe any indications of sexual differences.

2. *Bledius rarus*, n. sp. Niger, nitidus, antennis, pedibus, elytrisque testaceis, his disco late infuscato; prothorace sat crebre fortiterque punctato, medio canaliculato. Long. corp. 1½ lin.

Antennæ yellow, elongate; basal joint long, equal to the three following together; 2nd joint a good deal longer than 3rd, 6—10 each longer and slightly broader than its predecessor, 10th a good deal longer than broad, 11th pointed, longer than 10th. Head black, with a few indistinct punctures between the eyes, which are large, very prominent, and coarsely facetted. Thorax shining black, nearly straight at the sides till behind the middle, and thence a good deal narrowed to the base, so that the hind angles are very obtuse; it is not quite so long as broad, and the surface is rather coarsely but not closely punctured, and has a distinct channel along the middle. Elytra rather short, a little longer than the thorax, yellowish, with a large, common, dark patch on the middle, rather coarsely and moderately closely punctured, a little shining. Hind body a good deal narrower at the base than near the extremity, shining black, with the apex paler, almost impunctate, the basal segment not so shining as the others. Legs very pale yellow; anterior and middle coxæ a little infuscate.

Ega; a single individual.

3. *Bledius addendus*, n. sp. Testaceus, capite nigricante, antennis articulis 7—10 leviter transversis; thorace canaliculato, sat crebre minus profunde punctato; elytris thorace paulo longioribus, crebre punctatis; abdomine fere impunctato. Long. corp. 1⅔ lin.

Antennæ yellow, slender, moderately long, distinctly thickened towards the extremity; 1st joint about as long as the four following; 3rd and 4th joints slender, of 5—10 each is distinctly broader than its predecessor, the 6th about as long as broad, the following ones a little transverse. Mandibles reddish, elongate and curved, but unarmed. Head with the clypeus black, the vertex blackish-red; it is opaque, without any distinct sculpture; the eyes very convex. Thorax yellowish, about as broad as the elytra, a little shorter than broad; the sides quite straight till behind the middle, then gradually narrowed to the very obtuse hind angles; along the middle is a distinct, rather deep channel, and the surface bears shallow, moderately coarse and rather distant punctures, and is a little

shining. Elytra a little longer than the thorax, yellow, densely and moderately finely punctured, the hind margin of each separately much rounded. Hind body yellow, coriaceous, but with no distinct punctures. Legs yellow and rather stout; the spines on the four anterior tibiæ elongate.

Rio Solimoes; a single individual, found by Dr. Trail on the 11th October, 1874.

4. *Bledius simplex*, n. sp. Obscure testaceus, capite nigro, elytris fusco-testaceis, lateribus testaceis; prothorace transverso, subtiliter canaliculato, minus distincte punctato; elytris thorace longioribus, crebre subtiliter punctatis; abdomine impunctato. Long. corp. vix $1\frac{1}{2}$ lin.

Antennæ yellow, rather short, gradually thickened from the 3rd joint to the extremity; joints 6—10 rather strongly transverse. Mandibles reddish, slender and curved, only moderately long, unarmed. Head black, with the eyes very convex, without sculpture and quite unarmed. Thorax reddish, only slightly shining, much broader than long, nearly as broad as the elytra, the hind angles very obtuse; it has a very fine channel along the middle, and is indistinctly and rather sparingly punctured. Elytra distinctly longer than the thorax, yellow, with the sutural portion broadly infuscate; they are finely and rather closely punctured, the hind margin of each separately much rounded. Hind body quite impunctate. Legs pale yellow, short; the tibiæ rather slender.

Rio Solimoes; a single individual, captured by Dr. Trail, 11th October, 1874.

5. *Bledius muticus*, n. sp. Testaceus, sat nitidus, capite nigricante; thorace vix transverso, obsolete canaliculato, parce obsoleteque punctato; elytris crebre subtiliter punctatis. Long. corp. $\frac{7}{8}$ lin.

Antennæ yellow, rather stout; all the joints from 3—10 short, and each stouter than its predecessor, so that the penultimate ones are strongly transverse. Mandibles not elongate. Head black, without distinct punctuation, quite unarmed, with the eyes very convex. Thorax slightly narrower than the elytra, only a little broader than long, the hind angles quite rounded; it is yellowish and distinctly shining, only sparingly and very obsoletely punctured, and with a very obsolete channel along the

middle. Elytra distinctly longer than the thorax, yellowish, finely and moderately closely punctured. Hind body yellow, impunctate. Legs yellow, only moderately stout.

Rio Madeira; two individuals, captured by Dr. Trail 25th May, 1874. They were attracted by light.

6. *Bledius similis*, n. sp. Fusco-testaceus, capite abdominisque apice summo nigricantibus, pedibus pallidis; prothorace subtransverso, obsolete punctato, subtiliter canaliculato, angulis posterioribus sinuatis; elytris subtiliter sat crebre punctatis. Long. corp. 1 lin.

Antennæ yellowish; all the joints from 3—10 short, and each distinctly stouter than its predecessor, so that though the 3rd joint is both short and slender, the penultimate ones are rather strongly transverse. Head black. Thorax reddish, blackish towards the front margin, distinctly shorter than broad, only slightly narrower than the elytra, sparingly and indistinctly punctured, channelled along the middle; it is a little shining: the sides are nearly straight, till near the hind angles, when they are a good deal narrowed, in such a way as to make the hind angles appear a little sinuate. The elytra are rather narrow, a good deal longer than the thorax, of a dirty-yellowish colour, finely and indistinctly punctured. The hind body is yellowish and impunctate, the extreme apex a little blackened. The legs are pale yellow, rather slender.

Rio Purus; a single individual, found by Dr. Trail on the 25th October, 1874.

*Obs.*—This minute species resembles extremely the *B. muticus*, but has the thorax differently formed.

7. *Bledius modestus*, n. sp. Piceus, elytris dilutioribus, antennis pedibusque testaceis; prothorace latitudine haud breviore, lateribus rotundatis, canaliculato, sat evidenter punctato; elytris crebre subtiliter punctatis. Long. corp. $\frac{7}{8}$ lin.

Antennæ yellow, short; all the joints from 3—10 short and each distinctly broader than its predecessor, so that the penultimate ones are rather strongly transverse. Mandibles and palpi yellow, head nearly black, with the antennal tubercles rather strongly marked, and the eyes very convex. Thorax distinctly narrower than the elytra, as

long as broad, the sides a little rounded, and the base and hind angles rounded; it is of a pitchy colour and distinctly shining, with a channel along the middle, moderately closely but not very distinctly punctured. Elytra of an obscure-yellowish colour, distinctly longer than the thorax, finely and rather closely punctured. Hind body pitchy, curved at the sides and evidently contracted at the base; it is shining and almost impunctate. Legs pale yellow, rather slender.

Rio Madeira, a single individual found by Dr. Trail on the 25th May, 1874; it was attracted by light.

*Obs.*—This is the smallest species of *Bledius* I have seen; it is closely allied to *B. muticus* and *B. similis*, but is rather more slender in form, and has the sides of the thorax more curved.

### Trogophlœus.

Five species of this genus are here described, and only one other was previously known from the Continent of South America; the genus is one of almost universal distribution, and likely to prove numerous in species even in the tropics. The paucity of species as yet known from South America is pretty certainly, therefore, only the result of neglect on the part of collectors; several species are known from Cuba, and species of the genus are numerous in Chili.

1. *Trogophlœus mundus*, n. sp. Niger, dense punctatus, pedibus testaceis, antennarum basi fusco-testaceo; elytris subtestaceis; prothorace basi minus discrete bi-impresso. Long. corp. 1 lin.

Antennæ moderately long, a good deal thickened towards the extremity, blackish, the basal joint yellowish; 3rd joint shorter and more slender than 2nd; 4th joint small, 6—8 small and transverse, 9—11 distinctly broader than the others. Palpi infuscate, the 3rd joint broad. Head nearly as broad as the thorax, the eyes large, and occupying nearly all the side of the head; antennal tubercles elongate and sharply elevated, the surface depressed on the inside of each, so that the front of the head bears two longitudinal impressions; the surface of the head very finely punctured, dull. Thorax a good deal narrower than the elytra, a good deal broader than long, much narrowed towards the base; the surface densely punctured, and near

the base with two indistinct impressions extending towards the hind angles, and with scarcely any traces of longitudinal impressions. Elytra brownish, the base rather infuscate, densely and finely punctured, much longer than the thorax. Hind body black, very densely punctured, with a very fine, short, delicate, pale pubescence. Legs, including the coxæ, pale yellow; middle coxæ elongate, and separated by a very narrow space.

Ega; a single individual.

*Obs.*—This species, at first sight from its small size and comparatively narrow form, suggests a comparison with our *T. corticinus* and *T. pusillus*, but its structural characters show it to be more nearly allied to *T. obesus*. A second specimen from the same locality has the palpi, the base of the antennæ and the thorax paler in colour; but I consider it probable that these differences are only the result of the immaturity of the specimen.

2. *Trogophlæus breviceps*, n. sp. Brevior, latiusculus, piceus, antennis, palpis, pedibus, abdominisque apice testaceis; capite brevi, lato; thorace fortiter transverso, longitudinaliter bi-impresso; elytris subnitidis, minus dense punctatis. Long. corp. $1\frac{1}{8}$ lin.

Antennæ yellowish, longer than head and thorax; 1st joint very elongate, 3rd much more slender than 2nd, 8th about as long as broad, 9th and 10th a little transverse. Head very short and broad, but a little narrower than the thorax, the eyes, however, leaving a distinct prominent space behind them at the sides; the antennal tubercles short, the surface dull and extremely finely punctured. Thorax a good deal narrower than the elytra, about twice as broad as long, distinctly narrowed towards the base; the surface dull, extremely indistinctly punctured, with two distinct longitudinal impressions along the middle, which do not reach to the front, and near each side with a more indistinct broad impression. Elytra much longer than the thorax, neither altogether finely nor densely, but still indistinctly punctured, a little shining. Hind body broad, the apex yellowish; the segments indistinctly and sparingly punctured, and a little shining. Legs bright yellow; under side of head and thorax obscure reddish; middle coxæ scarcely contiguous; under face of hind body densely and finely punctured, dull.

Ega; a single individual.

3. *Trogophlœus latifrons*, n. sp. Rufus, capite fusco-rufo; prothorace transverso, lateribus subdenticulatis, dorso minus distincte bi-impresso; elytris sat fortiter punctatis; abdomine obsolete punctato, apicem versus nitidulo. Long. corp. $1\frac{1}{2}$ lin.

Antennæ reddish, rather long, a good deal thickened towards the extremity; 3rd joint about as long as, but more slender than 2nd; 4—6 subequal, rather small, bead-like; 7 and 8 broader than the preceding, rather transverse; 9 and 10 broader than the preceding, also transverse. Head broad and short, but distinctly narrower than the thorax, very dull, more obscure in colour than the other parts; the eyes large, but with a distinct prominent space at the sides behind them, the antennal tubercles short and strongly elevated, but without any distinct impression on the inner side of each. Thorax very broad and short, twice as broad as long, a good deal narrower than the elytra; the sides distinctly narrowed towards the base, and each with three or four minute setigerous prominences, giving them the appearance of being denticulated; the surface reddish, very opaque, very densely and indistinctly punctured, with two indistinct longitudinal impressions on the middle, and outside these scarcely visibly impressed. Elytra broad, much longer than the thorax, rather distinctly and somewhat closely punctured, a little shining. Hind body large, very indistinctly punctured, the basal segment nearly dull, the others more shining, so that the 6th is quite shining. Legs clear yellow; under surface unicolorous red, with the hind body densely and finely punctured and pubescent.

Ega and Tapajos; two individuals.

4. *Trogophlœus hilaris*, n. sp. Rufus, capite fusco-rufo; antennis elongatis, articulis nullis transversis; prothorace transverso, lateribus subdenticulatis, dorso minus distincte bi-impresso, angulis anterioribus minus rotundatis; elytris dense minus fortiter punctatis; abdomine apicem versus nitidulo. Long. corp. $1\frac{2}{3}$ lin.

Antennæ elongate, formed almost as in *T. latifrons*, but with joints 4—10 each slightly longer, so that 4—6 are less bead-like, and 7—10 not transverse. Head very short and broad, with a very minute fovea on the vertex in the middle. Thorax twice as broad as long, the sides slightly rounded towards the front, and distinctly narrowed

towards the base, and with two or three fine denticles; the disc with two indistinct longitudinal impressions. Elytra much longer than the thorax, densely and indistinctly, but not altogether finely punctured.

Tapajos and Ega; several specimens.

*Obs.*—This species, though very closely allied to *T. latifrons*, is larger, and may be readily distinguished by its more elongate antennæ. My description is drawn entirely from one of the Tapajos specimens, for I am not at all sure that I have not before me two or three very closely allied species; two of the individuals are considerably darker in colour, so that the term "piceo-rufo" would more correctly describe them, and one of these dark individuals shows, near the front angles of the thorax, a patch of peculiar elongate pubescence; which may, however, only be wanting from the other individuals on account of their being rubbed.

5. *Trogophlœus vicinus*, n. sp. Rufus, capite fusco-rufo; antennis elongatis, articulis nullis transversis; prothorace transverso, lateribus subdenticulatis, versus angulos anteriores bene rotundatis, dorso minus distincte bi-impresso; elytris dense minus fortiter punctatis; abdomine apicem versus nitidulo. Long. corp. $1\frac{2}{3}$ lin.

This species is extremely closely allied to the *T. hilaris*, but it has the thorax a good deal more rounded towards the front angles, and the part of the head behind the eyes is less distinct and less prominent. In other respects I see scarcely anything to distinguish the two species.

Amazons; a single specimen, without special locality.

## Apocellus.

This genus I consider one of the most interesting of the *Staphylinidæ* of the New World. It at present contains six species, found both in North America and South America. The facies of the species is greatly that of the *Falagria* forms of the *Aleocharini*, and the structure of the thorax is scarcely dissimilar from what may be found in some of the *Aleocharini;* the genus, therefore, affords us a connecting link between the *Oxytelini* and *Aleocharini*. The *A. planus* I here describe is of special interest as indicating in a certain manner what are the changes that have taken place in the head of the *Aleocharini*, so as to give rise to the appearance of a different insertion of

the antennæ. These changes may be briefly summed up as follows: in *Osorius* the labrum appears to be attached to the edge of the front of the head, but is, in fact, attached to a membrane underneath the front of the head, and is, therefore, mobile; in *Apocellus* this membrane intervenes in a very visible manner between the front of the head and labrum; for I consider the large semicorneous portion of the head, intervening between the transverse suture (very visible in *Apocellus*) and the labrum, to be clearly the homologue of the membrane above mentioned in *Osorius*, and which is very visible in many of the *Staphylinini*. In the *Aleocharini* the transverse suture above alluded to has disappeared, and the antennal tubercles can scarcely be recognized.

1. *Apocellus planus*, n. sp. Testaceus, metasterno, abdomine, elytrisque plus minusve infuscatis; capite, thorace, elytrisque opacis, dense subtilissime strigosulis; abdomine nitidulo, fere impunctato. Long. corp. $1\frac{1}{3}$ lin.

Antennæ yellow, rather stout and very elongate, longer than head, thorax and elytra; 2nd and 3rd joints slender and elongate, the latter a good deal the longer; 10th joint much longer than broad, 11th distinctly longer than 10th. Head yellow, the part in front of the transverse suture between the antennal tubercles more shining and less corneous than the other parts; the antennal tubercles strongly elevated, the front rendered opaque by very fine, indistinct, strigose sculpture, the middle with an indistinct fovea. Thorax small, only about half as broad as the elytra, about as long as broad, distinctly narrowed towards the base, very finely margined at the sides and base, subquadrate, but with the angles rounded; the surface rendered opaque by a very fine, indistinct, strigose sculpture. Elytra distinctly longer than the thorax, yellowish, but somewhat infuscate, especially towards the pleuræ; opaque, densely and finely strigose. Hind body broad, a little curved at the sides, shining yellowish, slightly infuscate, especially towards the extremity, almost impunctate; its under face as well as the metasternum more distinctly infuscate. Legs elongate, pale yellow.

Ega; three individuals, of doubtful sex.

2. *Apocellus lævis*, n. sp. Castaneo-testaceus, nitidulus,

impunctatus, antennis pedibusque testaceis; prothorace basi medio impresso; abdomine basi angustato. Long. corp. $1\frac{5}{8}$ lin.

Antennæ yellow, quite as long as head and thorax, a good deal thickened towards the extremity; 3rd joint distinctly longer than 2nd, and a good deal longer than 4th, which is slender and longer than broad; of 6—10 each is slightly longer and distinctly broader than its predecessor, each a little longer than broad; 11th long, a good deal longer than 10th. Head chestnut yellow, the hind angles very rounded, the clypeus large. Thorax narrow, scarcely so broad as the head, and not much more than half as broad as the elytra; it is longer than broad, quite convex, and with an impression at the base in the middle. Elytra quadrate, about as long as the thorax, of a chestnut colour, rather darker than the head and thorax. Hind body broad, but much narrowed at the base, so that its sides are greatly rounded; it is of a yellowish colour, with the apical segments a little infuscate. The legs are long and slender, the four hind femora very slightly infuscate towards the extremity.

Manaos; three individuals, captured by Dr. Trail in August, 1874. They were attracted by light.

*Obs.*—An undescribed species from Rio de Janeiro is very closely allied to *A. lævis*, but is rather smaller, has joints 4—6 of the antennæ longer, and the hind body more contracted at the base.

### Omalium.

The insignificant little species I here describe with this generic name is interesting, as being the only representative of the *Omalini* yet detected in the Amazons. Indeed, the group seems to be extremely poorly represented in tropical America, only two species of it having as yet been described from those parts, and scarcely any others existing, so far as I know, in collections; it is, however, quite possible that this paucity may prove not to be so complete as these facts would suggest, for our knowledge of the smaller species of tropical *Staphylinidæ* is still so very fragmentary, that no generalization as to an extensive group can with propriety be more than hinted at.

1. *Omalium nanum*, n. sp. Subopacum, depressum, nigrum, antennarum basi pedibusque testaceis; protho-

race transverso, dorso obsolete bi-impresso. Long. corp. $\frac{7}{8}$ lin.

Antennæ short, the five basal joints yellow, the others black; 2nd joint short and stout, 3rd very slender, 4th and 5th similar to one another, very small; 6—10 strongly transverse, the 6th much broader than the preceding ones, 7th broader than 6th, and 8th than the 7th; 8—10 very similar to one another, 11th short. Palpi yellow. Head greatly narrower than the thorax, only half as broad as the elytra; black, indistinctly but not altogether finely punctured, almost dull; ocelli small but distinct. Thorax about twice as broad as long, distinctly narrower than the elytra; the sides rounded and rather more narrowed in front than behind; on the middle are two very obsolete, large impressions; its punctuation is obsolete, but it is scarcely shining. Elytra twice as long as the thorax, their outer hind angle rounded, the sutural one almost rectangular; they are rather closely but quite indistinctly punctured, the punctuation at the apex becoming even finer and more indistinct than at the base; they are black and almost opaque. Hind body black, dull, its punctuation excessively fine, the lateral margins broad. The legs are yellow, but somewhat infuscate; they are short and slender; the tarsi are very short; the metasternum has a deep channel on its hinder part.

Two individuals of this species were found by Dr. Trail on the 5th November, 1874, but he has sent me no special locality.

## Piestus.

The insects of this genus are confined to the warm parts of the New World, though it must not be forgotten that the North American and European genus *Siagonium* approaches them very closely. The genus comprises about eighteen described species, and I here add five to that number. Of these five, two—viz., *P. validus* and *P. frontalis*—belong to the group of large species having the head armed with horns, and the mandibles much developed; *P. rectus* belongs to the *P. minutus*, Er., group; while *P. rugosus* and *P. aper* have as their only described near ally, *P. angularis*, Fauv.

The species of the genus have, many of them, an apparently wide range in South America, and their discrimination from one another in a satisfactory manner

is a matter of great difficulty. The characters by which the sexes may be distinguished are extremely slight; in some species the antennæ are very elongate in some male specimens, but in other individuals scarcely differ at all from those of the female, while the structure of the ædeagus shows scarcely any variation in very dissimilar species.

1. *Piestus validus*, n. sp. Niger, nitidus, subdepressus, abdominis apice piceo; antennis setosis, articulis 1, 3, 4 et 5 setis intus densioribus; fronte bispinosâ, spinis approximatis; prothorace sat crebre obsolete punctato. Long. corp. 6 lin.

Antennæ blackish, rather stout, $2\frac{1}{2}$ lin. in length, clothed with tawny, elongate setæ. These setæ are specially long and dense on the inner side of the 1st, 3rd and 4th joints, while the 5th joint is less setose than the 4th, but more than the 6th. Front of head armed with two moderately long acuminate spines; behind these the head in the middle is depressed, the depression shaped somewhat like a narrow V; the spines at nearly half their distance from the base are only separated by a width of about $\frac{3}{16}$ of a line; the surface is sparingly and finely punctured. Thorax 1 lin. in length, $1\frac{1}{8}$ lin. in breadth, channelled along the middle, transversely a little convex; the surface very shining, and with rather numerous, but obsolete punctures. Elytra shining black, $1\frac{1}{4}$ lin. in length, their greatest breadth just that of the thorax, viz., $1\frac{1}{8}$ lin., each with 5 deep striæ, and outside these with indications of a 6th stria sufficiently well marked at the extremity. Hind body black, not very shining; the segments punctured at the base and sides of each, the basal segment nearly entirely coriaceous; the extremity pitchy yellow, the paler colour commencing on the hind part of the 6th segment. Legs black, with the tarsi pitchy.

Pebas; three specimens, 2 ♂, 1 ♀.

*Obs. I.*—There are several species of *Piestus* mixed in descriptions and collections under the name of *P. bicornis*. I have not, however, seen the above-described species from any other locality than this of the Upper Amazons; its large size, together with its distinctly punctured thorax, distinguish it from all the closely allied forms.

*Obs. II.*—I have ascertained the sexes of this species by dissection, without which they cannot be distinguished. Of the two males, one has the thorax remarkably developed,

it being considerably broader than the elytra and more arched transversely. As this is probably an extreme sexual characteristic, my description has been made from the smaller male, which, in the development of its thorax, quite resembles the female.

2. *Piestus bicornis*, Ol., Er.

Pará; two female specimens. Var. *Oxytelinus*, Lap.; seven specimens from Ega. I am very doubtful whether this so-called variety be not rather a distinct species.

3. *Piestus spinosus*, Fab., Er.

Pará and Ega; six individuals.

4. *Piestus frontalis*, n. sp. Depressus, rufescens, nitidus, antennis elongatis; capite vertice bi-impresso, fronte spinis duabus brevibus distantibus armatâ; prothorace medio canaliculato, et punctato; elytris punctato-striatis. Long. corp. $4\frac{1}{2}$ lin.

Antennæ elongate and rather slender, $3\frac{1}{2}$ lin. in length; the three basal joints red, the others pitchy. Mandibles moderately long, greatly curved, each with a very long transverse tooth on the inner side; in the middle and on the upper side with a tooth some distance from the extremity; on the right mandible this tooth elongate and spine-like. Head shining dark red, without punctures; the front armed on each side with a short straight horn, the distance between the two horns being about $\frac{3}{8}$ lin.; within the antennal elevations the surface is depressed on each side, the two depressions are not connected by a channel. Thorax strongly transverse, $\frac{3}{4}$ lin. in length by $1\frac{1}{4}$ in width; very shining red, with a channel along the middle, and the disc with a few distinct punctures. Elytra $1\frac{5}{16}$ lin. in length by fully $1\frac{1}{8}$ in width, each with five deep punctured striæ, and with traces of a 6th stria externally. Hind body broad, infuscate-red, with the extremity paler, coarsely but not closely punctured. Legs red. Hind margin of prosternum in the middle almost straight; mesothoracic keel very obsolete.

Ega; a single individual, of doubtful sex.

*Obs. I.*—Though closely allied to *P. spinosus*, this species is rather smaller, and is very readily distinguished by the differences of the mandibles, of the frontal horns, and of the vertex.

*Obs. II.*—It is only after a good deal of hesitation that I have decided to consider this insect a new species. *P. capricornis*, Lap., Er., must be closely allied to it if not the same species. Laporte's figure represents an insect with less transverse thorax, and his words, "abdomen finement ponctué," are singularly inapplicable to the species I have described above as *P. frontalis*. Erichson's description of *P. capricornis* agrees much better with the *P. frontalis*. Nevertheless, though Erichson gives a detailed description of the mandibles of his species, he omits any notice of the remarkable transverse spine-like tooth which exists on the inner side of each mandible in *P. frontalis*, this being one of the most striking characteristics of the species.

5. *Piestus rectus*, n. sp. Rufescens, antennis (basi exceptis), capite abdomineque piceo-rufis; capite vertice unifoveolato, antice utrinque curvatim lineato; abdomine segmento 6° toto dense punctato. Long. corp. 3 lin.

Antennæ $1\frac{3}{4}$ lin. in length, the basal joint red, the two following pitchy red, the rest pitchy; the 1st joint not swollen on the upper side, but with a rough spot bearing a few long hairs, the other joints with sparing setæ. Head on the upper side blackish, shining, the middle part nearly on a level with the antennal elevation, on the inner side of this latter is a curved impression; these impressions are much abbreviated behind, so that they are far from meeting; the vertex is quite flat and bears a distinct fovea in the middle; the surface is sparingly sprinkled with fine punctures. Thorax strongly transverse, reddish, very shining, channelled along the middle; the surface with excessively obsolete, sparing, fine punctures, only to be detected on a careful examination with a high power; the hind angles obtuse, the impression near the hind angle small. Elytra just as broad as the thorax, about $\frac{5}{6}$ lin. in length and $\frac{3}{4}$ lin. in breadth, shining red, with the suture and outer and hind margins indistinctly blackish, each with five moderately fine striæ, which are indistinctly punctured. Hind body broad and parallel, pitchy, rather coarsely and closely punctured; segments 2—4 each with a smooth space in the middle behind, the punctures on the corresponding part of the 5th segment more sparing than at the base, the 6th evenly and distinctly punctured throughout; its extreme hind margin reddish, as are the

following segments; on the underside the hind body is pitchy red, paler towards the extremity, and all the segments 2—6 are coarsely and rather closely punctured; on segments 3 and 4 and base of 5 the punctures are almost wanting on a small space on the middle. Legs red.

Ega; four individuals, probably all females.

*Obs. I.*—Besides the specimens above described, I have another individual from the same locality (Ega), which I believe to be the male of *P. rectus;* it is rather smaller than the individuals described, but the antennæ are $2\frac{1}{4}$ lin. in length, the head is longitudinally depressed along the middle, and the front part is scarcely shining, being minutely strigose; the 1st joint of the antennæ is more densely penicillate, and the 2nd and 3rd joints have also a dense long pubescence on the inner face.

*Obs. II.*—I believe the most closely allied described species to be *P. pennicornis* and *P. plagiatus*, Fauv. I have a fourth still undescribed species in my collection from Rio, which is considerably larger, but has the head similarly formed and, as well as the antennæ, manifesting similar sexual disparities.

6. *Piestus minutus*, Er., Fauv.

Pará and Ega; four individuals. These individuals indicate a peculiar race, which I have not seen from any other locality; they are small (about two lines in length), and broad in proportion to their width; the elytra are nearly black in mature individuals.

7. *Piestus pygmæus*, Lap., Er.

Pará and St. Paulo; numerous specimens. This is another very puzzling species, owing to the variations it exhibits, and it is quite possible that two or three closely-allied species are mixed under this name.

8. *Piestus sulcatus*, Grav.

Pará, Lages, Ananá; five specimens, which agree exactly *inter se* and only differ slightly from individuals from Bahia.

9. *Piestus rugosus*, n. sp. Piceus, pedibus abdominisque apice rufescentibus, opacus; prothorace dense rugoso, lateribus pone medium obtuse dentatis; elytris lineis 6 elevatis; abdomine dense punctato. Long. corp. $2\frac{1}{2}$ lin.

Antennæ 1½ lin. in length, rather stout, pitchy black, with the basal joints rather paler; of joints 4—10 each is a little longer than its predecessor. Head with two curved lines on the front part, which meet so as to form an acute angle on the middle of the head; antennal callosities stout, but not greatly elevated; the whole surface densely rugose, quite opaque. Thorax strongly transverse; the sides rounded and distinctly narrowed in front, behind the middle with a short stout tooth, and behind this tooth cut away, the hind angles being distinctly marked and just rectangular; the whole surface is densely and coarsely rugose, quite dull; there is no distinct impression along the middle, and in front of the hind angles is a scarcely definite longitudinal impression, reaching nearly to the front margin. Elytra longer than the thorax, their sculpture on each consisting of a sutural, and six other fine, elevated, longitudinal lines; the broad spaces between these lines are peculiarly opaque, and are marked with some indistinct transverse marks, which probably represent obsolete coarse punctures. Hind body quite dull, densely and rather finely punctured; the apical segments and the hind margin of the 6th segment reddish; under surface not so dull as the upper; metasternum covered with coarse punctures and with a fovea at the extremity in the middle. Legs dull red.

Ega; a single individual, whose sex is unknown.

10. *Piestus aper*, n. sp. Opacus, piceus, pedibus rufis; capite mutico, longitudinaliter striguloso; prothorace lateribus trisinuatis, dense fortiterque punctato; elytris lineis 6 elevatis; interstitiis transversim rugosis; abdomine dense fortiterque punctato, apice dilutiore. Long. corp. 1¾ lin.

Antennæ 1⅛ lin. in length, stout, pitchy, the basal joints obscure red; 3rd joint scarcely so long as 2nd, 4th a good deal stouter than and quite as long as 3rd, 5—10 differing little from one another in length, each slightly stouter than its predecessor, 11th a little longer than but scarcely so broad as 10th. Head without impressions or lines, the antennal callosities only being present; the surface densely covered with longitudinal rugæ. Thorax broader than long, the front margin a little sinuate on each side the middle, so that the front angles are somewhat prominent; the sides each with two notches, so that they exhibit three

obtuse projections, and behind these much cut away at the hind angles; the surface covered with coarse dense punctures, so that the interstices are very narrow. Elytra rather broader and a good deal longer than the thorax, each with seven fine, raised, longitudinal lines, of which one is close to the suture and indistinct, and the outer one most distinct; the spaces between these lines marked with transverse lines, which are irregular, and represent a coarse confluent punctuation. Hind body coarsely punctured, the punctuation becoming more indistinct on the apical segments, which also are paler in colour. Metasternum coarsely, closely and deeply punctured throughout. Legs reddish; tarsi short, pubescent beneath, the basal joint of each distinctly broader than the others.

St. Paulo; two individuals, of uncertain sex.

### Hypotelus.

Only four species have yet been described as forming part of this genus; one from Kansas, and the others from tropical America; to these I now add a fifth species. It is probable that the genus, like *Piestus*, is one of the forms characteristic of the South American fauna.

I feel considerable doubts whether the species should at present be separated from *Piestus*. The two genera are extremely close in their general structure, and the only characters given to distinguish them are drawn from the trophi; but as the oral organs are subject to an excessive difference of development within the bounds of the genus *Piestus*, and as the comparison of these parts rests, so far as I know, on the examination of a single species of each genus, it is clear enough that the individuality of the genera has not yet been properly determined.

1. *Hypotelus micans*, n. sp. Picco-rufus, nitidus, antennis pedibusque rufo-testaceis; elytris stramineis, suturâ epipleurisque infuscatis; capite thoraceque sat crebre, distincte, elytris parcius obsoletiusque punctatis. Long. corp. 1 lin.

Antennæ reddish, not thickened at the extremity; 3rd joint much shorter than 2nd; 4th joint small; 5th to 10th broader than the preceding joints, differing little from one another, each subquadrate. Head rather small, dark reddish, shining, rather sparingly but quite distinctly

punctured, and with two large, well-defined impressions. Thorax a good deal broader than long, rounded at the sides, and a good deal narrowed behind, similar in colour to the head; the surface shining, rather sparingly but quite distinctly punctured, with an excessively fine abbreviated impressed line on the middle. Elytra a good deal longer than the thorax, sparingly and indistinctly punctured, pale shining-yellow; the suture infuscate, and the pleuræ piceous. Hind body pitchy, with the extremity reddish; the segments scarcely punctured, but finely strigose at the sides and base. Legs reddish-yellow.

Ega; a single individual.

### Isomalus.

This genus at present consists of about twenty-five described species found in all the warm parts of the world; the genus *Chasolium*, Cast., is apparently not sufficiently distinct from *Isomalus* to be at present adopted with advantage. The species are of the most difficult character, in so far as their discrimination from one another is concerned. I am not able to point out any external characters to distinguish the sexes; in certain species some males have the head very large, but it seems that this extra development in other individuals of the same sex and species disappears entirely.

1. *Isomalus agilis*, n. sp. Latiusculus, parallelus, perdepressus, nitidus, fere lævis, rufo-castaneus; capite oblongo; thorace lateribus antice rectis, postice rotundatis, margine anteriore utrinque impresso; elytris thorace paulo longioribus. Long. corp. $2\frac{1}{2}$ lin.

Antennæ slender, shorter than head and thorax, red, scarcely thickened towards the extremity; 10th joint almost as long as broad; 11th elongate, fully twice as long as 10th. Palpi red. Head as broad as thorax, oblong, the sides quite parallel, shining red, almost impunctate. Thorax quite as long as broad; the sides in front nearly straight, behind the middle rounded and narrowed towards the base; the front margin on each side bears a rather large impression, and at the hind angle on each side are two indistinct depressions, one in front of and external to the other. Elytra a little longer than the thorax, red, very shining, a little infuscate at the

extremity and sides, each with a fine puncture on the middle. Hind body reddish, shining, impunctate.

Ega; three individuals, one of which bears a label, "under bark, nimble."

2. *Isomalus dubius*, n. sp. Perdepressus, piceus, nitidus, fere lævis, antennis pedibusque testaceis; thorace basin versus fortiter angustato; elytris disco unipunctatis. Long. corp. $1\frac{1}{2}$—$1\frac{3}{4}$ lin.

Antennæ rather longer than head and thorax, slender, reddish, slightly thickened towards the extremity; 3rd joint a little longer than 2nd; 10th joint quite as long as broad, 11th a good deal longer than 10th. Head as broad as the thorax, flat, impunctate, very shining, pitchy, with the mandibles and parts of the mouth red. Thorax as broad as the elytra; the sides rounded at the front angles, greatly narrowed behind, with an indistinct denticle behind the middle, the base very narrow; shining piceous, almost without sculpture, the front margin on either side bearing two approximate punctures. Elytra narrowed towards the shoulders, a good deal longer than the thorax, shining, pitchy, each with a puncture on the middle. Hind body broad, flat, piceous, paler at the extremity, impunctate, bearing a few upright setæ. Legs reddish.

Ega; three individuals, which vary in size, in the development of the head, and in the length of the antennæ.

*Obs.*—This species is extremely closely allied to *I. pallidipennis*, Fauv., but is a little larger, has the elytra concolorous, and the antennæ a little longer.

3. *Isomalus tenuis*, Fauv.

St. Paulo; a single individual. The species was described by Fauvel from a specimen coming from Venezuela; the St. Paulo exponent does not differ from an example in my collection from Santa Rita, Brazil, so that the species appears to possess a wide range.

## Lispinus.

This genus as at present constituted consists of about forty described species, which occur pretty generally in the warmer parts of the globe; though not yet recorded from Australia, I can state that species of the genus occur even there. The distinction of the species from one

another appears to me likely to be a point of great difficulty, owing to the extreme general resemblance that exists between numerous species. The genus *Holosus* of Motschoulsky and Kraatz appears to be excessively closely allied to *Lispinus*, and scarcely justifies the adoption for it of a distinct generic name in the present state of our knowledge of the exotic *Staphylinidæ*. The South American species of *Lispinus* appear to me to belong to two groups, easily distinguished from one another by the form of the head; in *L. striola* and its allies the antennal tubercles are quite obsolete, and the front of the head is very evenly and distinctly margined, and its upper surface convex, while in the other group the antennal tubercles are distinct, and the front of the head is scarcely or not at all margined. *L. simplex* and *L. lætus*, here described, belong to this latter group, while all the other species I here describe belong to the first-mentioned group, the *L. depressus* making, however, a considerable approach to the second group.

1. *Lispinus striola*, Er.

Pará; a series of specimens.

This is, apparently, one of the species of *Staphylinidæ* having a great geographical range in the warm parts of the New World.

2. *Lispinus catena*, n. sp. Elongatus, angustulus, parallelus, nigro-piceus, nitidus; antennis, pedibus, abdominisque apice rufis; thorace basin versus leniter angustato, lateribus haud sinuatis, basi utrinque impressione angustâ; capite thoraceque sat crebre et subtiliter punctatis; elytris parcius punctatis, disco striolâ minus discretâ e punctis elongatis formatâ notatis. Long. corp. fere 2½ lin.

Antennæ reddish; joints 7—10 transverse, 3rd slightly longer than 2nd. Head rather finely and moderately closely punctured, on the disc with two larger distant punctures. Thorax not quite so long as broad; the sides only a little narrowed towards the base, on each side near the hind angles with a narrow, elongate impression, reaching quite half-way to the front; on the middle is an excessively fine channel; the surface is rather finely and moderately closely punctured. Elytra a little longer than the thorax, only a little less shining, sparingly but not altogether finely punctured, the punctures being rather

elongate; along the middle these punctures are crowded together and confluent, so as almost to form an impressed stria; the sutural stria deep. Hind body narrow and elongate, cylindric, blackish, with the extremity reddish; above finely and indistinctly punctured, beneath the oblique striæ on the sides of each segment are quite distinct. Legs, including the coxæ, red.

Ega; a single specimen, which I believe to be a female, and an individual of a slightly different variety from Pará.

*Obs.*—This species may readily be distinguished from *L. striola* by the more setose surface, by the more slender joints of the base of the antennæ (2—5), and by the less ample elytra and hind body; its nearest described ally is probably *L. quadripunctulus*, Fauvel.

3. *Lispinus apicalis*, n. sp. Niger, nitidus, antennis piceis, pedibus abdominisque apice summo rufis; thorace elytrisque crebre sat fortiter punctatis; abdomine punctis magnis leviter impressis, puncto singulo parte posteriore omnino deficiente, segmento apicali fortiter profundeque punctato. Long. corp. $2\frac{3}{4}$ lin.

Antennæ rather stout; 3rd joint nearly twice as long as 2nd, 7—10 each a little transverse. Head a good deal narrower than the thorax, distinctly, moderately closely punctured. Thorax a good deal broader than long, the sides nearly straight, only slightly curved; it is covered with rather coarse, moderately close punctures, bears an extremely fine channel on the disc, and an elongate impression near the outer angles, which extends considerably more than half-way to the front. Elytra a good deal longer than the thorax, rather coarsely punctured; the punctures at the outside, however, quite fine, and at the lateral margins wanting. Hind body a little flattened, blackish, with the hinder part of the 7th segment red; the segments on the upper side bear a peculiar obsolete punctuation, the hinder part of an obsolete coarse puncture being entirely wanting; the 7th segment, however, offers a striking contrast to the preceding ones, for it is deeply and distinctly punctured: the under surface of the hind body bears numerous fine, raised, oblique striæ.

Pará; a single individual (I believe a female), collected by Mr. Smith.

4. *Lispinus terminalis*, n. sp. Niger, sat nitidus, an-

temis piceo-rufis, pedibus abdominisque apice summo rufis; thorace elytrisque crebre sat fortiter punctatis; abdomine punctis magnis leviter impressis, puncto singulo margine posteriore omnino deficiente, segmento apicali fortiter punctato. Long. corp. $2\frac{3}{8}$ lin.

Antennæ dark red, moderately stout; 3rd joint much longer than 2nd, 7—10 slightly transverse. Head rather finely punctured. Thorax broader than long, straight at the sides and not narrowed behind; rather closely punctured, with a narrow smooth space along the middle, and an elongate impression near each outer angle, which reaches more than half-way to the front. Hind body punctured as in *L. apicalis*, but the punctures on the 7th segment not quite so deep and coarse.

Pará; a single individual (I believe a female), collected by Mr. Smith.

*Obs.*—This species is extremely closely allied to *L. apicalis*, but is not quite so large, and the sculpture of the dorsal plate of the 7th segment is a good deal less coarse. It is very similar in size and form to *L. striola*, but has the 3rd joint of the antennæ longer. The elytra are without the discoidal stria of *L. striola*, and their sutural portion is more coarsely punctured, and the sculpture of the hind body is different.

5. *Lispinus punctatus*, n. sp. Nigro-piceus, nitidus, fortiter punctatus, antennis piceis, pedibus abdominisque apice rufis; capite lato; prothorace transverso, basin versus angustato, basi utrinque impresso. Long. corp. 2 lin.

Antennæ stout and short; joints 4—6 broader than long, 7—10 distinctly broader than the preceding, strongly transverse; 11th joint short, rather paler than the 10th. Head broad and short, with a small impression on each side, near the front; rather coarsely punctured, the punctures towards the vertex finer and more sparing, over the eyes almost passing into striæ. Thorax much broader than long, a good deal narrowed towards the base, and a little sinuate in front of the hind angles; shining black, coarsely and rather closely punctured, with an excessively fine channel on the middle, close to each hind angle, with a broad but not sharply limited impression, the front part of which forms a narrow, indistinct channel. Elytra a good deal longer than the thorax, coarsely, deeply, and

rather closely punctured with elongate punctures. Hind body shining black, red at the extremity; on the upper surface distinctly punctured along the middle and at the sides with oblique striæ, the basal segment broadly opaque at the base; its under surface shining and with shallow, oblique striæ. Legs red.

Ega; a single male.

6. *Lispinus cognatus*, n. sp. Nigro-piceus, nitidus, fortiter punctatus, antennis piceis, pedibus abdominisque apice summo rufis; prothorace transverso, basin versus angustato, basi utrinque impresso. Long. corp. $1\frac{3}{4}$ lin.

Antennæ short, rather stout; joints 4—6 a good deal broader than long, 7—10 strongly transverse. Head rather large, with a very small impression on each side near the front; the surface shining, moderately closely and finely punctured. Thorax rather strongly transverse, distinctly narrowed towards the base, the surface rather coarsely and closely punctured, and at each hind angle with an ill-defined, not very large impression. Elytra a good deal longer than the thorax, coarsely and closely punctured. Hind body cylindric, but a little depressed; on the upper surface along the middle segments 2—5 are rather coarsely but indistinctly and not closely punctured, at the sides the punctures become obscure oblique striæ; the 6th segment finely and sparingly punctured; the front portion of the basal segment with a moderately broad opaque space at the base. Legs red.

Ega; a single individual, which I believe to be a male.

*Obs.*—This species is very closely allied to *L. punctatus*, but is a little smaller, and the head and thorax are narrower in proportion to their length, and the impressions on the thorax are narrower in their basal portion, and the antennæ are not so stout.

7. *Lispinus modestus*, n. sp. Angustulus, subparallelus, piceus, pedibus abdominisque apice rufis; minus nitidus, crebre sat fortiter punctatus, abdomine segmento 6° sat crebre punctato. Long. corp. 2 lin.

Antennæ short, not much thickened towards the extremity; joints 4—6 rather stout, the 6th distinctly transverse; 7—10 broader than the preceding, rather strongly transverse. Head distinctly narrower than the thorax, rather closely and finely punctured, and with a distinct

small impression on each side towards the front. Thorax a little broader than long, the sides a little narrowed towards the base, not at all sinuate; the surface moderately finely and closely punctured, near each hind angle, with an elongate impression. Elytra distinctly longer than the thorax, their punctuation rather coarser than, and not quite so close as, that of the thorax. Hind body depressed, cylindric, but little shining; all the segments, including the 6th, distinctly punctured along the middle, the punctures at the sides becoming shallow striæ; on the under face the striæ along the sides are more deep and distinct, the punctures along the middle sparing. Legs red.

Ega; a single individual, which I believe to be a female; also two specimens from Pará, collected by Mr. Smith.

8. *Lispinus planus*, n. sp. Rufo-piceus, depressus, parallelus, fere opacus, antennis pedibusque rufis; capite thoraceque subtiliter sat crebre punctatis; elytris parcius punctatis; thorace basi utrinque profunde longitudinaliter impresso; lateribus basin versus subsinuatis. Long. corp. fere $1\frac{3}{4}$ lin.

Antennæ reddish, rather slender at the base, distinctly thickened towards the extremity; joints 4—6 not at all transverse, 7—10 distinctly broader than the preceding, each a little transverse. Head narrower than the thorax, rather short; the surface finely and not closely punctured, and with a small punctiform impression on each side the middle towards the front. Thorax broader than long; the sides scarcely narrowed till near the base, where they are a little contracted; the surface finely and not closely punctured, close to each hind angle with a large longitudinal impression, which is sharply limited both on the inside and the outside; it extends more than half-way to the front, and is opaque at the bottom, because of a very dense, fine sculpture. Elytra a good deal longer than the thorax, rather sparingly punctured with elongate but not deeply impressed punctures. Hind body flattened, pitchy red, red at the extremity, sparingly and indistinctly punctured. Legs red. Metasternum with an ill-defined longitudinal impression along the middle.

Ega; one male and one female individual.

*Obs.*—This species is, no doubt, allied to *L. linearis*,

Er.; it is probable that the *L. linearis* of Fauvel (Not. Ent. ii. p. 47) is a distinct species from that of Erichson, and I have three or four other very closely allied species from different parts of Brazil.

9. *Lispinus depressus*, n. sp. Rufescens, depressus, parallelus, fere opacus; capite thoraceque subtiliter sat crebre, elytris parcius punctatis; thorace basi utrinque profunde longitudinaliter impresso, lateribus basin versus subsinuatis. Long. corp. 1½ lin.

This species resembles extremely *L. planus*, but is rather smaller, narrower and paler in colour; the antennæ are a trifle more slender, and the punctuation of the upper surface is just a little finer. I should have considered it a small pale variety of *L. planus*, had it not been that the metasternum possesses only very indistinct traces of any impression along the middle.

Ega; a single female individual.

10. *Lispinus simplex*, n. sp. Piceus, depressus, subopacus, parce obsoletissime punctatus, antennis pedibusque testaceis; elytris disco impunctatis. Long. corp. ⅞ lin.

Antennæ yellowish, a good deal stouter at the extremity than at the base; 3rd joint shorter and more slender than 2nd, 4—6 small; 7—10 broader than the preceding joints, short, and though not very broad decidedly transverse. Head rather small, margin of the clypeus very indistinct, antennal tubercles distinct, eyes rather prominent; the surface nearly dull from being finely coriaceous, and also showing a few excessively fine punctures. Thorax transverse, a little rounded at the sides and with the basal portion distinctly contracted; the surface with a sculpture similar to that of the head, with an excessively fine channel along the middle, and with a broad, short, very ill-defined impression at each hind angle. Elytra much longer than the thorax, finely coriaceous and dull, each with a distinct puncture on the disc, and with a few very obsolete punctures. Hind body almost impunctate, dull, the extremity and the hind margin of each segment yellowish. Legs yellow.

Ega; two individuals, of doubtful sex.

11. *Lispinus lætus*, n. sp. Angustulus, depressus, rufo-

testaceus, nitidus, parce obsoletissime punctatus; prothorace lateribus rotundatis, basin versus angustato. Long. corp. $\frac{7}{8}$ lin.

Antennæ reddish, rather slender; 3rd joint shorter and smaller than 2nd, 4—8 differing little from one another, not transverse, 9 and 10 broader than the preceding joints, transverse. Head rather small, clypeus almost immarginate, eyes prominent, antennal tubercles distinct; the colour is infuscate-red, the surface is shining, but very finely coriaceous, and with a few excessively fine punctures. Thorax transverse, a good deal rounded at the sides and narrowed behind, shining reddish, with a very few extremely obsolete punctures, and with an indistinct impression near each hind angle. Elytra much longer than the thorax, bright yellowish-red, almost impunctate. Hind body infuscate-reddish, the extremity and the hind margin of each segment brighter, impunctate, the sides of each segment coriaceous. Legs bright yellow.

St. Paulo; two individuals, sex unknown.

### Thoraxophorus, Motsch. (*Glyptoma*, Er.)

Under this generic name there are mixed in collections and entomological works two distinct genera; of these, the one to which *Glyptoma crassicorne*, Er., and its allies belong, is allied to *Lispinus*; while the other, containing *Thoraxophorus corticinus*, Motsch., and its allies, is one whose natural affinities are much more obscure to me. Of the two new species here described, one, *T. opacus*, is allied to *G. crassicorne*, while the other, *T. crassus*, is an ally of *T. corticinus*. Of these two genera or groups, the one containing *G. crassicorne* is peculiar to South America, while the other is found in South America, North America, Europe and East India.

1. *Thoraxophorus opacus*, n. sp. Elongatus, niger, opacus, pedibus piceis; antennis crassiusculis, elongatis, articulo 2° solum transverso; elytris unicostatis; abdomen cylindricum. Long. corp. $1\frac{1}{8}$ lin.

Antennæ stout, about 1 lin. in length, blackish; 2nd joint smaller than the others, not so long as broad; 3rd a little longer than 4th, quadrate, 4th nearly as long as broad; 5—10 differing little from one another, each a little longer than broad; 11th joint pointed at apex. Head quite as broad as thorax; the surface dull, velvet-like,

coarsely but quite indistinctly punctured, the vertex with two indistinct elevations. Thorax narrower than the elytra, rather longer than broad; the sides straight from the front angles till just behind the middle, thence suddenly narrowed to the base; the surface dull and velvet-like, with a broad impression along the middle, most distinct on the front part; the lateral portions with coarse, indistinct punctures. Elytra longer than the thorax, each with a sharply-defined, longitudinal line down the middle; the surface dull and quite obsoletely punctured. Hind body cylindrical, elongate, dull and velvet-like, the basal segments with some coarse rugosities, the apical ones almost without sculpture. Legs pitchy.

Ega; a single individual.

*Obs.*—A species very closely allied to the above, and apparently as yet undescribed, is not uncommon in Brazil; it has the antennæ shorter, the penultimate joints being transverse, and the thorax has the sides a little rounded near the front angles.

2. *Thoraxophorus crassus*, n. sp. Ferrugineus, opacus, breviusculus; antennis brevibus, articulis transversis; capitis angulis posterioribus acutis; prothorace transverso lateribus dentatis; elytris tricostatis; abdomine conico, segmentis longitudinaliter lineato-striatis. Long. corp. 1 lin.

Antennæ short and stout, reddish, basal joint dilated on the inner side, towards the extremity; 2nd joint short, broad, bead-like; 3rd joint rather shorter and narrower than 2nd, 4—6 short, similar to one another; 7—10 broader than the preceding ones, strongly transverse; 11th short, pointed at apex. Head with the clypeus margined in front, the antennal tubercles joined by a fine curved line parallel with the clypeus; along the middle two strongly raised, longitudinal marks, which are connected in front; the hind angles projecting and quite acute, the surface depressed between the elevations. Thorax strongly transverse, but narrower than the elytra, the front angles prominent, the sides with two or three angular projections; along the middle two strongly raised elevations, which are connected in front, and appear to project over the front margin. Elytra short and broad, longer than the thorax, each with three elevated longitudinal lines, and the surface between these reticulated. Hind body short, convex, pointed; the segments extremely finely margined at the

sides, covered with fine, straight, longitudinal, elevated lines. Legs slender.

St. Paulo; a single individual.

*Obs.*—I have also in my collection an individual of this species, which was captured by Mr. Squires near Rio de Janeiro.

### Leptochirus.

I find that considerable confusion exists both as to the generic characters and the specific forms represented by the name *Leptochirus*. There are, it seems to me, two distinct forms confounded under the generic name, viz., one in which the anterior coxæ are separated by a well-developed process of the prosternum, and another in which this process is absent; *L. scoriaceus*, and all the Amazonian species here described, belong to the first of these groups, as do also *L. laticeps* and other species from the tropics of the Eastern hemisphere. On the other hand, a large number of the Eastern species, such as *L. ebeninus* and *L. mandibularis*, have the front coxæ comparatively elongate and exserted, and the division between their cavities quite concealed, so that it is probable they will ultimately be considered generically distinct; it is to this latter group that the *L. bicornis*, Fauv., from Mexico, should be referred.

The species of the genus as yet described from the New World are only seven in number, but they are in reality more numerous than has been supposed, for I have at least a dozen undescribed species from this part of the globe in my own collection. The species, are, however, very difficult to distinguish, from their great similarity, and demand a careful study before their distinctions can be satisfactorily elucidated. I can only satisfy myself as to four distinct species from the Amazons, two of which I here describe as new.

1. *Leptochirus fontensis*, n. sp. Nigerrimus, nitidus, fronte bi-impressâ, clypeo oblique declivo, utrinque acute tuberculato, pone tuberculam bipunctato; abdomine supra fere impunctato. Long. corp. (extenso) 8 lin.

Antennæ 2 lin. in length; 10th joint scarcely so long as broad. Head with the two frontal impressions without punctures, or rather each with two very indistinct punctures; clypeus descending obliquely from the front, with an

acute tubercle on each side, and behind this with two coarse punctures on each side. Thorax scarcely 1¼ lin. in length by 1½ in breadth. Elytra just as long as thorax, with their inflexed margin rather coarsely punctured. Hind body slender; on the upper side, at the base of each segment, there are no punctures in the middle; on the under side the basal segment is without punctures in the middle; the following segments rather coarsely punctured at the base; the 6th segment more sparingly than the the others; metasternum with only ten or twelve not very distinct punctures on each side, external to the middle coxæ.

Fonte Boa; two individuals, communicated by Dr. J. W. H. Trail, who captured them there on the 17th October, 1874; and also found at Ega by Mr. Bates.

*Obs. I.*—This species, in the structure of its head and mandibles, is very closely allied to the Brazilian *L. scoriaceus*, Germ, but is much smaller and especially narrower; the antennæ are considerably shorter, and the fine dense punctuation found at the base of each of the two or three front segments, on the upper side of *L. scoriaceus*, is wanting.

*Obs. II.*—I have drawn up the above description entirely from one of the Fonte Boa individuals, which is, I believe, a female; the individuals from Ega, of which several are before me, are slightly smaller, and show a slightly greater development of the punctures on the under side of hind body; but these differences are only very slight, and I believe all the individuals from both localities to be of one species.

2. *Leptochirus brunneoniger*, Perty; Fauvel.

Ega; two individuals.

This appears to be a widely distributed, and yet but little variable, species. I see no difference between these Ega specimens and individuals from near Rio de Janeiro, and the species is recorded by Fauvel as Mexican. I have not myself seen any specimens from the north of the Amazons; on the other hand, an individual in my collection is labelled "Peru."

3. *Leptochirus latro*, n. sp. Niger, nitidus, thorace sanguineo; mandibulis brevibus; antennis crassiusculis; vertice canaliculato, canaliculâ antice profundâ, clypeo

parte posteriore elevatâ, anteriore abrupte declivâ; abdomine subtus magis punctato. Long. corp. 6 lin.

Antennæ short and stout, $1\frac{1}{2}$ lin. in length; the 10th joint hardly so long as broad. Mandibles short and stout, their upper edge strongly sinuate near the base. Head with the longitudinal channel as deep in front as behind; the hind part of the clypeus elevated to the level of the vertex, and on the same plane with it, but quite distinctly marked out therefrom, the front part of the clypeus at right angles to the hind portion; the upper part of the head is black, with the neck obscurely reddish, beneath blackish-red. Thorax rather broad, red, 1 line in length, and quite $1\frac{1}{4}$ in breadth. Elytra narrower than the thorax, $1\frac{1}{8}$ lin. in length, and just about the same in breadth, quite black. Hind body black, moderately stout; on the under face, the segments 3—6 are coarsely punctured over a large space on each side the middle. Legs black, with the tarsi reddish.

Ega; a single individual, of the male sex.

*Obs.*—This species is closely allied to both *L. brunneoniger* and *L. maxillosus*. The structure of the head and mandibles is almost the same as in the former species, but *L. latro* is smaller and has the thorax shorter, and the elytra black. The structure of the head distinguishes the species from *L. maxillosus*, and the shorter antennæ distinguish it from both the species alluded to.

4. *L. maxillosus* (Fab.).

Ega; St. Paulo, about a dozen examples.

I find great difficulty about this species; indeed, it seems to me probable that two or three variable and yet closely-allied species may be confounded in collections under this name. M. Fauvel has separated one form and given it the name of *L. proteus*, but I have not been able to satisfy myself as to which of the forms his description refers. This author gives a figure of the front of the head of an insect he calls *L. maxillosus* (Notices Ent. pt. ii. pl. i. fig. 2), but I have seen no specimen at all like his figure.

These Amazonian individuals vary much in size, colour, and also somewhat in the front of the head; but as I cannot see that these characters indicate distinct species, I think it best merely to record them as *L. maxillosus*.

TURELLUS, n. gen.

Antennæ clavatæ, 9-articulatæ.
Tarsi omnes 4-articulati.

Labrum ample, corneous; front margin rounded and serrated, the serrations being about twenty in number. Mandibles elongate, slender, acutely pointed, strongly curved, with an elongate pointed tooth on the middle of the inner side of each. Maxillary palpi elongate; 1st joint not observed, 2nd joint rather long and slender, two or three times as long as broad; 3rd joint similar to 2nd, but nearly twice as long; 4th joint large, longer than 3rd, elongate oval, but a good deal dilated on the inner side about the middle.

Antennæ inserted at the sides of the front, as in *Oxytelus*, short, 9-jointed; the 1st joint stout, joints 2—7 small, each a little shorter than its predecessor; 8th joint strongly transverse, 9th joint forming a pointed oval club, terminating in setæ. Head shaped as in *Oxytelus;* the eyes rather small, but prominent. Prothorax strongly transverse, the base cut away on each side at the hind angles; beneath, the horny portions of the prosternum and sides occupy nearly the whole space, so that the front coxæ are nearly entirely covered; they are small, quite contiguous, placed quite at the hind part of the thorax, the openings of their cavities being apparently reduced to two minute, circular, contiguous (? confluent) spaces, without lateral prolongations. Middle coxæ minute, nearly contiguous, subglobose. Elytra longitudinally costate. Hind body short and broad, much narrowed to the extremity, rather strongly margined, composed of six visible segments. Legs rather small, tibiæ slender and simple; tarsi short, 4-jointed, the three basal joints short, and about equal to one another, the 4th joint rather longer than the three others together. Form of the whole insect—short and broad, flat on the upper side.

This minute insect, for which I have been obliged to find a new generic name, is perhaps the most interesting of the *Staphylinidæ* discovered by Mr. Bates. Only a single individual was brought back by Mr. Bates, and I have therefore been able to expose its characters only in a very imperfect manner; the lower lip and its appendages and also the maxillæ and base of the maxillary palpi have quite eluded my observation, and also I have been able to see only in an imperfect manner the structure of the hind parts of the prosternum. Nevertheless, it is evident that

the insect is one of the most anomalous of the *Staphylinidæ*, and that the determination of its nearest allies will be a matter of difficulty. The structure of the anterior coxal cavities, I anticipate, will be found to be very close to that which obtains in *Thoraxophorus corticinus;* from that insect its trophi, however, remarkably separate it and appear to indicate a relationship with the anomalous genus *Evæsthetus*. I am unacquainted with the North American genera *Edaphus* and *Stictocranius*, and am unable to guess what relationship it may bear thereto. Its nearest allies I cannot, therefore, at present point out.

1. *Turellus Batesi*, n. sp. Obscure rufescens, opacus, antennis pedibusque testaceis, elytris tricostatis. Long. corp. $\frac{1}{8}$ lin.

Antennæ yellow, about as long as head. Head a good deal narrower than the thorax, the front part in the middle rather largely depressed; the depressed part triangular, and limited in front by the slightly raised and curved edge of the clypeus, and on each side by an obscure raised line proceeding from the point of insertion of the antennæ; these two lines converge about the middle of the head, but do not quite meet with one another; the surface is opaque and dull, but has no distinct sculpture. Thorax quite as broad as the elytra, quite twice as broad as long; the front margin a little sinuate on each side, the front angles not in the least deflexed, a little rounded, the short sides nearly straight; the hind margin a good deal cut away on each side, so as to leave a gap between the thorax and elytra at the sides; the surface not quite even, but with two indistinct, distant, longitudinal elevations; between these, at the base, are three very minute and indistinct foveæ; the surface quite dull, but with no distinct sculpture. Elytra broad, a good deal longer than the thorax, each with three raised, longitudinal lines, the inner one of which is the most distinct, and is placed about midway between the suture and side; the second is placed quite at the side, and the third, or outer one, which is near the second, is placed on the deflexed lateral portion of the wing case; the pleural portion of the wing case under this third line is abruptly inflexed and rather broad. The surface is dull, but without distinct sculpture. Hind body dull, without distinct sculpture.

Ega; a single individual, whose sex I do not know.

## V. *Description of a new genus, and some new species, of* Staphylinidæ *from Mexico and Central America.* By D. Sharp, M.B.

[Read 7th June, 1876.]

In this paper I give the descriptions of a few interesting new species of *Staphylinidæ*, which have been added to my collection by several naturalists; a few species were collected by Mr. Salvin during his visit to Central America, but only one of them can be described with advantage; the most interesting species amongst Mr. Salvin's captures was *Leptochirus bicornis*, Fauvel, of which two specimens were found in the Val de Fuego at an elevation of 6,400 feet; this species is the only representative yet brought to light in the New World of a group of *Leptochirus*, which is represented by numerous species in the eastern tropics of the Old World. A small collection sent by Mr. Flohr from the city of Mexico to Mr. Bates proved to contain several novelties, as did also the very small but interesting collection of this family made by Mr. Belt during his residence at Chontales.

*Glenus coxalis*, n. sp. Fulvus, capite thoraceque aureis, nitidis, hoc parce punctato; abdomine nigro, apice late rufo-testaceo. Long. corp. 18 mm.

Mas: coxis posterioribus spinâ elongatâ, leviter curvatâ armatis.

Antennæ with the 3rd joint scarcely so long as the 2nd. Head rather broad and short, of a brilliant golden colour, rather coarsely but not densely punctured, the punctures more sparing near the front and along the middle. Thorax rather small, similar in colour to the head, about as long as broad; the base and hind angles greatly rounded, the sides scarcely sinuate; the sides are only sparingly punctured, and there is a rather broad but not elevated space along the middle, without punctures. Elytra distinctly broader, but scarcely longer than the thorax; of a dark-tawny colour, quite dull, but only obsoletely punctured, and with a scanty golden pubescence. Hind body black,

with the 6th, 7th and apical segments yellow, rather sparingly and not coarsely punctured. Legs tawny, with the coxæ infuscate. The middle of the sternum also infuscate.

The male has the hind coxæ armed with an elongate spine, projecting backwards and slightly curved outwards; the ventral plate of the 6th segment of the hind body has in the middle, near the base, two small patches of pale pubescence, separated by a narrow shining space, while the hind margin of the following segments has a moderately large excision in the middle.

Panama; sent by Mr. Edwards of San Francisco.

*Obs.*—This is a very distinct species, to be placed at one extremity of the genus, with *G. restitus* and its allies at the other; the only individual I have seen has lost its antennæ, except the three basal joints.

Selma (n. gen. *Staphylininorum*).

Corpus pubescens.
Antennæ intus subserratæ.
Palpi omnes articulo ultimo dilatato.
Thorax lineis lateralibus haud conjunctis.

Mandibles rather short, sinuate on their inner margin towards the base, but without distinct tooth. Maxillary palpi with the first joint very short, 2nd stout, longer than broad, 3rd a good deal shorter than 2nd, but not quite so thick, 4th longer than any of the others, and a good deal dilated. Labial palpi with the two basal joints short and stout, the 3rd quite as long as the other two together and dilated from the base towards the apex; mentum very short and very broad. Thorax with the side piece broad, and much produced inwardly over the spiracle, which is hence hidden; its lateral margin formed by the upper line, which is a good deal deflexed at the front angle, but only joins the lateral line on the front margin at the side of the neck. Middle coxæ widely separated, and with a wide space between the meso- and meta-sternal processes. Dorsal segments of hind body without curved lines. Front tarsi dilated; front tibiæ also broad and without spines; middle and hind tarsi rather broad and flattened from above.

The peculiar insect for which I propose this generic name has caused me great hesitation as to its affinities. I think on the whole the most probably correct place I can

assign to it is in the neighbourhood of *Plociopterus* and *Brachydirus*, though it is extremely different from those insects in appearance and in the structure of its palpi; I thought it probable at one time that it would prove to be allied to the Eastern *Trichocosmetes* and its neighbours, but the structure of the prothorax proves to be very different from what it is in the oriental forms mentioned, while the points it has in common therewith, such as the subserrate antennæ and the narrow neck, are of much less primary importance. Taking all into consideration, it appears to be a very isolated form.

*Selma modesta*, n. sp. Nigra, opaca; dense, subtiliter punctata; antennis apicem versus testaceis. Long. corp. 14 mm.

Antennæ nearly black at the base, becoming paler towards the apex, the last three or four joints nearly entirely yellow; they are 4 mm. in length, and distinctly thickened towards the apex; joints 6—10 with the upper inner angle acute; 3rd joint rather longer than 2nd; 10th scarcely so long as broad. Head short and broad, distinctly narrower than the thorax; the eyes large and convex, so that they only leave a small part at the hind angles unoccupied; the vertex is straight, and the neck scarcely half the width of the head; the upper surface is densely and evenly but not coarsely punctured, quite dull, but with very little pubescence, and has a minute fovea on the middle. Thorax about as long as broad, distinctly narrower than the elytra, the hind angles very indistinct; the surface is extremely densely and rather finely punctured; it is quite dull, and bears a fine, depressed, dark, fuscous pubescence. Scutellum covered with a fine black pubescence. Elytra rather longer than the thorax, black, with an obscure brassy tinge, densely and finely punctured, but the punctuation very indistinct, except towards the humeral angles, where the very fine pubescence is more scanty. Hind body black, with a very indistinct brassy tinge, much narrowed towards the apex, densely and finely punctured, and with a very fine pubescence; the middle of each segment at the base, however, is only very sparingly punctured, so that when extended the hind body looks a little shining along the middle. The legs are black and rather short and stout: the tarsi pitchy; the basal joint of the hind foot broad, and quite as long as the three following together; the tibiæ bear an ashy pubescence.

A single female, found at Chontales, has been given me by Mr. Belt.

*Xanthopygus viridipennis*, n. sp. Niger, nitidus, antennis abdominisque segmentis duobus ultimis testaceis; elytris viridis, vel cyaneo-viridis; abdomine sat crebre punctato. Long. corp. 15—16 mm.

Mas: abdominis segmento 6° ventrali medio lineâ transversâ longe pilosâ, margineque apicali leviter emarginato, segmento 7° apice medio profunde inciso.

Allied to *S. sapphirinus*, Er., but rather narrower, and with longer thorax; the punctuation of the upper surface less dense, and the elytra greenish rather than blue or violet. The antennæ are rather long and slender, entirely yellow. Maxillary palpi longer than in *S. sapphirinus*; labrum pitchy. Head coarsely and irregularly punctured, with a broad impunctate space on the disc, the punctures not very numerous except behind the eyes. Thorax quite as long as broad, rather coarsely and irregularly punctured, the punctures moderately numerous. Elytra slightly longer than the thorax, shining green or greenish-blue, moderately strongly and not closely punctured. The hind body is black, with the two last segments entirely reddish-yellow, its punctuation moderately close and distinct. Legs black; front tarsi ferruginous.

The characters of the male are similar to those of *S. sapphirinus*, but the emargination of the 6th segment is broader and not so deep.

Chontales; Nicaragua.

*Philonthus discretus*, n. sp. Niger, capite thoraceque subæneis; antennis crassiusculis, capite transversim suborbiculato; thorace crebre fortiter punctato, lineâ latâ impunctatâ; elytris abdomineque crebre punctatis. Long. corp. 10—11 mm.

Antennæ black, with the base of the 2nd joint red; rather stout, not thickened at the extremity; 3rd joint as long as 2nd; of 4—10 each is a little shorter than its predecessor; the 10th not quite as long as broad. Head small, a good deal narrower than the thorax, rounded, shorter than broad, bearing numerous deep and rather coarse punctures, which are wanting on a space along the middle. Thorax rather narrower than the elytra, about as long as broad, the sides a little curved and a little

narrowed towards the front, bearing numerous deep punctures, which are wanting on a rather broad space along the middle. Elytra slightly longer than the thorax, closely and rather finely punctured. Hind body evenly, closely and moderately finely punctured. The middle coxæ are contiguous.

In the male the front tarsi are very greatly dilated and furnished beneath with yellowish hairs, and the front tibiæ are broad and short. The ventral plate of the 7th segment of the hind body has a large and elongate excision, the anterior part of which is membranous; the 6th segment has a small rounded excision, and is longitudinally impressed in front of it.

City of Mexico; two male individuals, sent by Mr. Flohr.

*Obs.*—This species has a peculiar appearance, reminding one of the genus *Staphylinus*, and is remarkable by its robust front tibiæ. I do not know of any near ally for it. The labium is small, and the ligula is entire.

*Philonthus Flohri*, n. sp. Niger, capite, thorace, elytrisque leviter ænescentibus; antennis gracilibus, articulis nullis transversis; thorace lateribus sinuatis, seriebus dorsalibus 4-punctatis; elytris thorace longioribus, cum abdomine crebre punctatis, hoc subtus pubescentiâ pallidâ vestito. Long. corp. 13 mm.

Mas: tarsis anterioribus modice dilatatis; abdomine segmento 7° ventrali apice late minus profunde exciso.

Fem.: tarsis anterioribus simplicibus.

Antennæ rather long and slender, black, scarcely at all thickened towards the extremity, all the joints elongate, even the 10th being longer than broad. Head broad and short, distinctly narrower than the thorax, with a pair of punctures on each side between the eyes, and numerous others about the hind angles. Thorax about as long as broad, the sides very distinctly sinuate; the dorsal series consists of four punctures; there are other punctures along the margins, and also five punctures on each side near the front. Scutellum dull black, rather closely but obsoletely punctured. Elytra rather longer than the thorax, rather closely and distinctly, moderately finely punctured. Hind body very black, distinctly and only moderately closely punctured, and clothed with black hairs; the anterior segments without any trace of carina in the middle at their bases; beneath it is still more sparingly punctured, and the

hairs are pale. The middle coxæ are moderately distant. The tarsi are slender, the basal joint on the hind ones is longer than the two following together.

Five specimens, sent from the neighbourhood of the city of Mexico by Mr. Flohr, in whose honour I have named the species.

*Obs.*—This species is just about the size of our *P. æneus*, but differs therefrom at the first glance by the elongate antennæ.

*Philonthus mexicanus*, n. sp. Niger, capite, thorace, elytrisque leviter æneoscentibus, pedibus picco-testaceis; antennis articulis nullis transversis; capite suborbiculato, thorace angustiore, hoc seriebus dorsalibus 4-punctatis; abdomine nitidulo, parce punctato. Long. corp. 9—10 mm.

Mas: tarsis anterioribus subdilatatis; abdomine segmento 7° ventrali apice triangulariter exciso.

Antennæ black, moderately long, scarcely at all thickened towards the extremity; the 10th joint is the shortest, and is slightly longer than broad. Head a good deal narrower than the thorax, shining and nearly black, with a pair of punctures on each side between the eyes, and others near the hind angles. Thorax narrower than the elytra, quite as long as broad, slightly narrowed towards the front; obsoletely sinuate at the sides, with a dorsal series of four punctures on each side the middle, and also with four punctures on each side towards the front, besides the small marginal punctures. Scutellum black, finely and not closely punctured. Elytra about as long as the thorax, rather closely and finely punctured. Hind body black and shining, the segments both above and below only very sparingly punctured, but with rather numerous long setæ. The legs are yellow, but greatly suffused with black, the yellow colour being most distinct on the upper faces of the femora; the middle coxæ are distinctly but not greatly separated.

The male has a rather large triangular notch at the apex of the ventral plate of the 7th segment, but it is about half filled up by a membrane; the front tarsi of this sex are only a little dilated, and in the female they are simple.

Eight individuals, sent from the city of Mexico by Mr. Flohr.

*Obs.*—This species is a little larger than our *P. varius*,

and has the head more orbiculate, and is remarkable by the sparing punctuation of the hind body.

*Tesba Belti*, n. sp. Nigra, nitida, capite supra subopaco, dense rugoso-punctato, subtus cum lateribus parcissime punctato; antennis articulis 4—10 valde transversis. Long. corp. 21 mm.

Upper surface of head covered with dense, extremely coarse and deep punctures; the punctures at the hind angles, however, are only sparing, and at the sides behind the eyes are almost absent; its under surface is black and shining, and bears only a very few rather coarse punctures. The extreme apex of the hind body is distinctly reddish.

Found by Mr. Belt at Chontales, and named after him.

*Obs.*—This species almost exactly resembles *T. laticornis* (Tr. Ent. Soc. 1876, p. 195), except in the sculpture of the head.

*Pæderus Salvini*, n. sp. Apterus; elongatus, niger, antennis palpisque testaceis, elytris viridi-cæruleis thorace multo minoribus. Long. corp. extens. 13—15 mm.

Head broad and large, coarsely and moderately closely punctured, black and shining; antennæ about as long as head and thorax, rather slender, yellow, 3rd joint very long, quite twice as long as 2nd; of 6—11 each is a little shorter than its predecessor, the 11th being markedly shorter than the preceding one. Thorax large and convex, the front and front angles greatly rounded, the sides much narrower towards the base; it is shining black, distinctly but neither coarsely nor closely punctured, with a broad space along the middle impunctate. Scutellum dull black, the exposed portion impunctate. Elytra a good deal shorter and narrower than the thorax, the shoulders very narrow; they are of a greenish or bluish colour, and bear coarse punctures, the interstices of which are very irregular and uneven. The hind body is black, and is rather sparingly but distinctly punctured. The legs are black, with the tarsi pitchy or pitchy-yellow; the front tarsi rather broad, and parallel-sided, distinctly more dilated in the male.

The excision on the apical abdominal segment in the male is rather large and deep, and the segment preceding it is more closely punctured on the middle than elsewhere.

Found at Aceytum, at an elevation of 5,100 feet, by

Osbert Salvin, Esq., in whose honour I have named the species.

*Obs.*—This species is allied to the Columbian *P. rutilicornis*, but is very readily distinguished therefrom by its much shorter head and elytra. In size and form it is extremely similar to the Japanese *P. Poweri*, but its black legs and more punctured upper surface separate it decidedly therefrom.

*Osorius mundus*, n. sp. Niger, nitidus, antennis pedibusque rufis; thorace elytrisque parce punctatis, illo lineâ medio impunctatâ, minus discretâ; abdomine crebre punctato. Long. corp. $7\frac{1}{2}$ mm.

Antennæ red, rather longer than the head, the five terminal joints distinctly thicker than the others. Clypeus almost straight in front. Head with coarse punctures, which near the eyes are elevated, the hind portion is without punctures, as is also a space along the middle. Thorax about as long as broad, greatly narrowed behind, shining black, with sparing, coarse punctures, which are absent from an indistinct space along the middle. Elytra slightly longer than the thorax, shining black, rather coarsely and sparingly punctured. Hind body rather closely punctured with rough punctures. Legs dark red.

Two specimens, sent from the city of Mexico by Mr. Flohr.

*Obs.*—This species is closely allied to the North American *O. latipes*, but is more than twice its size.

## VI. *Descriptions of new genera and species of* Halticinæ. By Joseph S. Baly, F.L.S.

[Read 7th June, 1876.]

### List of Species.

| | |
|---|---|
| Sphærometopa ornata .. .. .. | Java. |
| „ Cumingii .. .. .. | Manilla. |
| „ diversa .. .. .. | Singapore. |
| Acrocrypta aureipennis .. .. .. | Borneo. |
| Sutrea (n. g.) elegans .. .. .. | New Guinea. |
| „ hexaspilota .. .. .. | „ |
| „ albofasciata .. .. .. | „ |
| „ Wallacei .. .. .. | „ |
| „ bipustulata .. .. .. | „ |
| Argopus Haroldi .. .. .. .. | India. |
| Eucycla (n. g.) quadripustulata .. .. | Borneo. |
| „ æneipennis .. .. | „ |
| Chirodica fulvipes .. .. .. .. | Cape of Good Hope. |
| „ fulva .. .. .. | „ |
| „ Wollastoni .. .. .. | „ |
| „ elongata .. .. .. .. | „ |
| Podagrica Chapuisii .. .. .. | Java. |
| „ tarsata .. .. .. | New Guinea. |
| „ Pysche .. .. .. .. | „ |
| Phrynocepha Deyrollei .. .. .. | Mexico. |
| Phygasia (n. g.) ornata .. .. .. | Hong Kong. |
| „ Hookeri .. .. .. | India. |
| Lypnæa (n. g.) flava .. .. .. | New Guinea. |
| Syphrea (n. g.) pretiosa .. .. .. | Guatemala. |
| Elytropachys quadripustulata .. .. | Singapore. |
| „ cæruleipennis .. .. | Cambodia. |

### Genus Sphærometopa, Chapuis.

Gen. Col. xi. p. 80.

*Sphærometopa ornata.*

Rotundato-ovata, valde convexa, rufo-fulva, nitida, antennarum articulis 2—10 elytrisque nigris, his distincte punctatis, margine inflexo apiceque rufo-fulvis, utrisque fasciis duabus utrinque abbreviatis, unâ ante, alterâ pone medium positis, flavis.

Long. 3 lin.

*Hab.*—Java.

Head finely punctured, carina obsolete, encarpæ not contiguous. Thorax nearly three times as broad as long;

sides nearly straight, slightly converging from base to apex; anterior angles thickened, obtusely truncate; disk finely but not very closely punctured. Scutellum trigonate, its apex acute. Elytra rather coarsely punctured, shining black; the apex and the inflexed limb rufo-fulvous; each elytron with two slightly irregular transverse bands, abbreviated on the outer margin and at the suture, flavous.

*Sphærometopa Cumingii.*

Late ovata, valde convexa, piceo-fulva, nitida, scutello antennisque nigris, harum articulis tribus basalibus piceo-fulvis, duabus apicalibus sordide albidis; elytris tenuiter sed distincte punctatis, suturâ antice, fasciâ basali extrorsum abbreviatâ, alterâ ante medium alterâque pone medium, his utrinque abbreviatis, nigris.

Long. 4 lin.

*Hab.*—Phillipine Islands; collected by the late H. Cuming.

Rather narrower than *S. ornata*. Vertex smooth, impressed with a few minute punctures, visible only under a lens; encarpæ oblique, remote; three lower joints of antennæ fusco-fulvous, two outer ones dirty white, the rest black. Thorax three times as broad as long; sides nearly parallel, slightly rounded, anterior angles thickened, obtuse; surface minutely punctured. Elytra more distinctly punctured than the thorax.

*Sphærometopa diversa.*

Late ovata, valde convexa, subtus nigra, prothorace piceo, supra castaneo; antennis nigris, articulis duobus apicalibus albidis.

Long. $3\frac{2}{3}$ lin.

*Hab.*—Singapore; collected by Mr. Wallace.

Head remotely punctured; encarpæ quadrangular, not contiguous; basal joint of antennæ equal in length to the two following united; three lower joints nigro-piceous, two outer ones dirty white. Thorax three times as broad as long; sides rounded, scarcely converging in front; hinder angles distinct, the apex acute; anterior angles thickened, obtusely truncate; disk distinctly but not very closely punctured, the lateral and the outer third of the basal margins narrowly edged with nigro-piceous. Elytra broader than the thorax, their surfaces rather more strongly punctured than that of the latter.

Genus Acrocrypta, Baly.

Journ. of Entom. i. p. 457.

*Acrocrypta aureipennis.*

Rotundata, convexa, rufa, nitida, scutello purpureo-nigro; antennis extrorsum modice incrassatis, articulis 7—10 nigris, ultimo albo; elytris aureis, late viridi-limbatis.

Var. A. Pectore abdomineque piceo-tinctis.

Long. $3\frac{1}{2}$—4 lin.

Borneo (Sarawak); collected by Mr. Wallace.

Head smooth, impunctate, impressed down the front with a faint longitudinal groove; encarpæ remote; antennæ shorter than half the length of the body, their outer half slightly thickened. Thorax three times as broad as long; sides nearly straight, slightly converging from base to apex, anterior and hinder angles thickened, the former obtusely truncate; basal margin slightly oblique and bisinuate on either side, medial lobe obtusely rounded; upper surface impunctate. Elytra much broader than the thorax, shoulders broadly rounded; surface finely and subremotely punctured; humeral callus slightly thickened; just without the callus is a single row of deep punctures, which terminate posteriorily in a large fovea; inflexed limb concave, its outer margin dilated, metallic blue.

Genus Sutrea.

*Corpus* oblongo-elongatum, aut anguste ovatum, modice convexum.

*Caput* exsertum, breve, *facie* perpendiculari, inter oculos elevatâ, *encarpis* contiguis; *antennis* filiformibus. *Thorax* transversus, lateribus marginatis. *Elytra* thorace paullo latiora, parallela aut anguste ovata, confuse punctata, limbo laterali distincte dilatato, paullo reflexo. *Pedes: coxis* anticis prosterno paullo altioribus; *femoribus* posticis incrassatis; *tibiis* dorso non sulcatis, quatuor anterioribus apice muticis, posticis spino acuto armatis; *tarso* postico ad apicem tibiæ inserto; *unguiculis* appendiculatis. *Prosternum* oblongum, concavum, apice plerumque dilatatum; *acetabulis* anticis apertis; *mesosternum* trigonatum, apice angulato-emarginatum.

Nearly allied to *Sebæthe*, separated by its narrower form, the less dilated sides of the thorax and of the elytra,

and by the absence of the longitudinal sulcation on the dorsal surface of the tibiæ; from *Aphthona** it is separated by the unarmed apices of the four anterior tibiæ.

*Sutrea elegans.*

Flava, nitida, oculis, femorum posticorum apice elytrisque nigris, his tenuissime, confuse punctulatis, utrisque apice maculisque duabus magnis flavis.

*Fœm.*—Abdominis segmento ultimo apice obtuse rotundato.

Long. 3½—4 lin.

*Hab.*—New Guinea; collected by Mr. Wallace.

Head shining, impunctate, face elevated between the eyes, the elevated portion forming a broad ill-defined carina, the apex of which is angulate; encarpæ subtrigonate, contiguous; antennæ rather more than half the length of the body, slender, filiform, 3rd joint much longer than the 2nd, outer joints stained with fuscous. Thorax more than three times as broad as long; sides rounded, slightly sinuate just behind the anterior angle, the latter very obtusely rounded, hinder angles armed with a small lateral tooth; surface smooth, very minutely and subremotely punctured, lateral border reflexed. Scutellum rufo-piceous, semi-rotundate. Elytra very finely punctured, black or pitchy-black, each with the apical border, together with two large irregular transverse patches, yellow. These patches, which are abbreviated externally at a distance from the lateral border, extend inwardly nearly to the suture; they are placed one before the middle and the other between the middle and the apex.

*Sutrea hexaspilota.*

Anguste ovata, convexa, picco-fulvo, nitida, femoribus posticis piceis: thorace flavo-albo, impunctato; capite (antennis exceptis) elytrisque nigris, his tenuiter punctulatis, utrisque maculis tribus, duabus subrotundatis vix ante medium transversim positis, unâque transversâ, sublunatâ, ante apicem positâ, flavo-albis.

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* Dr. Chapuis errs in stating that the four anterior tibiæ in *Aphthona* are without apical spines; they are present in all the species that I have examined, but are frequently hidden by stiff hairs, and therefore difficult to discover without a good lens.

*Mas.*—Abdominis segmento ultimo trilobato, lobis fere æquilongis, lobo intermedio concavo, sursum paullo reflexo, apice obtuso, lobis lateralibus latis, obtuse truncatis.

*Fœm.*— Abdominis segmento ultimo apice bilobato.

Long. $2\frac{1}{2}$ lin.

*Hab.*—New Guinea (Dorey).

Head smooth, impunctate, front impressed on either side, just within the inner margin of the eye, with a deep fovea; carina well defined, narrowed at base and apex; encarpæ subpyriform; space between the antennæ, lower half of clypeus and mouth piceous. Thorax more than twice as broad as long; sides rounded, anterior angles thickened, obtusely rounded, produced laterally into a short acute tooth. Elytra finely but not very closely punctured.

*Sutrea albofasciata.*

Anguste ovata, convexa, nitida, scutello capiteque nigris, antennis basi sordide fulvis; thorace impunctato, flavo-albo; elytris distincte punctulatis, nigris, utrisque fasciâ vix ante medium, alterâ apicem versus, utrinque abbreviatâ, maculâque apicali flavo-albis; pectore abdomineque pallide piceis; pedibus (femoribus posticis nigris exceptis) sordide fulvis.

Var. A. Elytrorum maculâ apicali obsoletâ.

*Mas.*—Abdominis segmento ultimo apice trilobato, lobis æquilongis; lobo medio concavo, vix sursum reflexo, apice obtuse rotundato.

*Fœm.*—Abdominis segmento ultimo apice integro, rotundato.

Long. 2—$2\frac{1}{2}$ lin.

*Hab.*—New Guinea (Dorey).

Head smooth and shining, impunctate; antennæ with the four lower joints obscure fulvous, the 5th, together with the apices of the 3rd and 4th, piceous, six outer joints black; 3rd joint twice the length of the 2nd; encarpæ subpyriform, contiguous; carina ill-defined at its upper half, its apex acute, lower end contracted, and produced for a short distance down the clypeus; apex of the latter, together with the labrum, piceous. Thorax more than twice as broad again as long; sides rounded, anterior angles thickened, obtusely truncate, hinder angles armed with a small lateral tubercle. Scutellum trigonate. Elytra ovate, distinctly punctured.

*Sutrea Wallacei.*

Anguste ovata, convexa, sordide flava, nitida, antennis extrorsum nigris; scutello rufo-piceo; elytris distincte punctulatis, nigris, utrisque fasciis duabus, utrinque abbreviatis, unâ vix ante medium, alterâ ante apicem, flavo-albis; corpore subtus piceo tincto.

*Mas.*—Abdominis segmento ultimo longitudinaliter sulcato; apice trilobato, lobo medio sursum reflexo, apice obtuso, lobis lateralibus vix brevioribus, latis, obtuse rotundatis.

Long. $1\frac{2}{3}$—2 lin.

*Hab.*—New Guinea (Dorey).

Similar in sculpturing, in form of carina, &c., to the last species (*S. albofasciata*). Antennæ fulvo-piceous, the three outer ones black. Thorax with the anterior angles thickened, obtuse, faintly produced laterally; sides very regularly rounded. Elytra ovate, more finely punctured than *S. albofasciata*.

*Sutrea bipustulata.*

Anguste ovata, convexa, flavo-alba, nitida, antennis extrorsum, pectore, abdomine pedibusque posticis piceis; scutello elytrisque nigris, his distincte punctulatis, utrisque pustulâ transversâ, fere prope medium positâ, flavo-albo ornatis.

Var. A. Elytrorum pustulis suturâ confluentibus, fasciam transversam extrorsum abbreviatam formantibus.

*Mas.*—Abdominis segmento ultimo apice trilobato, lobo medio lato, brevi, apice truncato.

*Fœm.*—Abdominis segmento ultimo apice truncato, bisinuato.

Long. 2—$2\frac{1}{2}$ lin.

*Hab.*—New Guinea (Dorey).

Clypeus transversely concave, its upper portion thickened; carina broad and ill-defined below, narrowed and acuminate above. Thorax rather more than twice as broad as long; sides nearly parallel at the base, rounded and converging anteriorly, anterior angles thickened, obtuse; surface impunctate. Hinder tibiæ and tarsi rufo-piceous. Prosternum narrowed between the coxæ, triangularly dilated posteriorly, its apex truncate.

Genus Argopus, Fischer.

The insect described below differs from the hitherto described species of the genus in having the anterior margin of the clypeus entire, and not emarginate; it agrees, however, so completely in all other characters, including the spine at the apices of all the tibiæ, that I have not hesitated in placing it in the genus.

*Argopus Haroldi.*

Subhemisphæricus, rufo-fulvus, nitidus, oculis nigris, metasterno abdominisque basi piceis; elytris profunde punctatis, cæruleo-nigris, anguste rufo-limbatis, utrisque maculis sex 1-2-2-1 dispositis flavis ornatis.

Long. $2\frac{1}{3}$ lin.

*Hab.*—India.

Head short, trigonate; clypeus deflexed, its anterior margin entire; carina broad, ovate, its medial line occupied by a short longitudinal ridge; encarpæ remote, well defined, subquadrate. Thorax twice as broad as long; basal margin bisinuate on either side; medial lobe slightly produced, obtuse; sides distinctly margined, rounded from base to apex, anterior angles subacute; upper surface smooth and shining, remotely impressed with coarse, deep punctures. Scutellum small, trigonate. Elytra coarsely and deeply punctured, bluish-black, each very narrowly edged with rufous, and having on the disk six subrotundate, flavous spots,—one at the base, two placed transversely before the middle, two transversely behind the latter and one subapical. Legs short, robust, all the thighs thickened, the hinder pair scarcely thicker than the others; tibiæ curved outwardly, and thickened at the apex; two hinder pairs with the outer edge deeply grooved on the lower two-thirds; edges of the groove produced on either side at the lower end into a flattened tooth; apices of all the tibiæ armed with a small moveable spine; those on the hinder pair not larger than the others; basal joint of tarsus dilated.

Genus Eucycla.

*Corpus* rotundatum, valde convexum. *Caput* in thoracem fere totum immersum, trigonatum; *facie* perpendiculari, inter antennas elevatâ; *clypeo* cuneiformi, postice elevato, *carinâ* obsoletâ; *encarpis* transversis, contiguis;

*antennis* filiformibus, corpore longioribus ♂, illo brevioribus ♀, basi fere approximatis, articulo primo elongato, paullo incrassato, articulo ultimo compresso, elongato-ovato; *oculis* magnis, integris, oblongis. *Thorax* transversus, basi utrinque bisinuatus, lobo medio distincte producto, rotundato. *Scutellum* subtrigonatum. *Elytra* thorace latiora, late rotundata, distincte marginata, punctato-striata, limbo inflexo plano. *Pedes* robusti: *femoribus* posticis valde incrassatis; *tibiis* dorso planis, ad apicem vix concavis, quatuor anticis muticis; *tarso* postico ad tibiæ apicem inserto; *unguiculis* appendiculatis. *Prosternum* transversum, coxis anticis fere æquialtum; *acetabulis* anticis apertis.

*Eucycla quadripustulata.*

Rotundata, valde convexa, rufo-picea, nitida, antennis extrorsum, thorace punctato, elytrisque nigris, his subfortiter punctato-striatis, interspatiis irregulariter punctatis; utrisque pustulis duabus magnis, unâ ante, alterâ pone medium positis, rufis.

Long. 1¾ lin.

*Hab.*—Borneo; Sarawak.

Head nearly impunctate; clypeus wedge-shaped, raised above the general surface of the face, its surface rugulose; five lower joints of antennæ, together with the apex of the penultimate and the whole of the terminal joints, pale piceous, the rest black; basal joint longer than the three following united; jaws nigro-piceous; vertex sometimes rufous. Thorax transversely convex, nearly three times as broad as long; sides rounded and converging from base to apex; anterior angles thickened, broadly obtuse; hinder angles distinct, subacute; surface coarsely punctured. Scutellum small, trigonate. Elytra rather strongly punctate-striate, interspaces irregularly but not very closely punctured; each with two large rufous patches,—one slightly transverse, extending from the basal margin nearly to the middle of the elytron, the other, also transverse, placed halfway between the middle and the apex. Hinder thighs dark piceous; apex of abdomen picco-fulvous.

*Eucycla æneipennis.*

Rotundata, valde convexa, rufo-picea, nitida, capite thoraceque rufis, hoc tenuiter subremote punctato; pedibus antennisque nigris, harum articulis tribus basalibus pallide

rufo-piceis, articulo ultimo sordide albo; elytris æneis, sat fortiter punctato-striatis, interspatiis ad latera convexis.

Long. $1\frac{2}{3}$ lin.

*Hab.*—Borneo (Sarawak).

Antennæ in the male longer than the body, basal joint more than equal in length to the two following joints united, about equal to the 4th; apical joints scarcely compressed, slightly curved; jaws and lower end of clypeus piceous. Thorax nearly three times as broad as long; sides rounded and converging from base to apex, anterior angles thickened, obtusely and obliquely truncate; surface finely but distinctly punctured. Elytra regularly and rather strongly punctate-striate, interspaces smooth, convex on the outer disk.

## Genus Chirodica, Germar.

*Thorax* dorso non sulcatus; *elytra* confuse punctata; *femora* antica quatuor leviter, postica sat valde incrassata; *tibiæ* anticæ quatuor apice muticæ; *acetabula* antica aperta.

This genus resembles greatly in form many of the European species of *Podagrica*.

### *Chirodica fulvipes.*

Anguste oblonga, postice attenuata, convexa, subtus nigra, nitida, pedibus antennisque fulvis, his apice infuscatis; thorace elytrisque metallico-purpureis.

Long. $1\frac{1}{3}$ lin.

*Hab.*—Cape of Good Hope.

Head impunctate, faintly strigose; encarpæ trigonate, contiguous at the apex; carina ill-defined, broad; five lower joints of antennæ fulvous, six outer ones stained with black. Thorax nearly twice as broad as long; sides rounded, slightly converging in front; hinder angles rounded, anterior angles subacute, curved slightly outwards; above convex, impressed in front of the base with a very faint transverse groove, from the middle of which an indistinct longitudinal impressed line which runs upwards halfway across the disk; surface finely but rather closely punctulate. Scutellum trigonate, shining black. Elytra scarcely broader than the thorax at the base, parallel, attenuated towards the apex, the latter in each

elytron obliquely truncate; similarly punctured to the thorax.

*Chirodica fulva.*

Anguste oblonga, convexa, flavo-fulva, nitida, antennis, basi exceptâ, pallide piceis.

Long. $1\frac{1}{3}$ lin.

*Hab.*—Cape of Good Hope.

Head smooth, impunctate; encarpæ obsolete, apex of carina very acute; antennæ robust, nearly equal to the body in length. Thorax convex, one-half broader than long; sides straight and parallel at the base, thence rounded and converging to the apex; angles produced into a subacute tooth, hinder angles distinct; surface finely punctured. Elytra scarcely broader than the thorax, attenuated near the apex, the latter acutely rounded; surface finely punctulate.

*Chirodica Wollastoni.*

Elongata, convexa, nigra, nitida, capite, thorace pedibusque fulvis, antennis extrorsum infuscatis.

Long. $1\frac{1}{2}$ lin.

*Hab.*—Cape of Good Hope; collected by Mr. Bewick.

Head smooth, impunctate; encarpæ contiguous at the apex; seven or eight outer joints of antennæ stained with fuscous. Thorax more than one-half broader than long; sides nearly straight and parallel at the base; anterior angles thickened, oblique, hinder angles distinct, subacute; upper surface smooth, moderately convex, smooth, impunctate. Elytra rather broader than the thorax; sides parallel, conjointly rounded at the apex; convex, slightly less so along the suture, rather closely impressed with round shallow punctures.

The present and the following species differ from the preceding in being more elongate and less robust and in having all the thighs less thickened.

*Chirodica elongata.*

Elongata, parallela, modice convexa, fulvo-picea, nitida, antennis basi, thorace pedibusque fulvis, abdomine elytrisque flavis.

Long. $2\frac{1}{3}$ lin.

*Hab.*—Cape of Good Hope.

Head smooth, impunctate; encarpæ transversely trigonate, contiguous; antennæ half the length of the body; 3rd

to 10th joints short, submoniliform, slightly compressed; three lower joints fulvous, the rest black. Thorax one-third broader than long at the base; sides diverging from the base to beyond the middle, thence obliquely converging and slightly rounded to the apex; hinder angles distinct, anterior slightly produced, thickened, obtusely truncate; surface finely punctured. Elytra broader than the thorax; sides parallel, converging near the apex, each elytron with its apex obtusely rounded; surface flattened along the suture, finely punctulate, minutely granulose-punctate.

Genus Podagrica.

*Podagrica Chapuisii.*

Elongato-ovata, convexa, rufo-fulva, nitida, elytris metallico-violaceis, apice rufis, confuse punctatis; antennis apice nigris.

Long. 2 lin.

*Hab.*—Java.

Head impunctate; encarpæ trigonate, contiguous; antennæ robust, four lower joints rufo-fulvous, the following three piceous, the four outer ones black. Thorax half as broad again as long; sides nearly parallel, slightly rounded; hinder angles acute, the anterior obliquely truncate, produced exteriorly into an acute tooth; upper surface finely but distinctly punctured, impressed on either side at the base with a short longitudinal groove. Elytra more strongly punctured than the thorax.

*Podagrica tarsata.*

Ovata, convexa, rufo-fulva, nitida, antennis, basi exceptis, tarsis tibiisque posticis apice nigris; elytris metallico-cæruleis.

Long. $2\frac{2}{3}$ lin.

*Hab.*—New Guinea (Dorey).

Labrum and jaws nigro-piceous; carina obsolete; clypeus thickened, distinctly punctured, vertex impunctate; antennæ with the three basal joints rufo-fulvous, the rest black; third joint scarcely longer than the second; eyes black. Thorax nearly twice as broad as long; sides rounded, anterior angles produced into an oblique obtuse tooth; hinder angles tuberculate; disk smooth, impunctate. Scutellum trigonate, its apex obtuse. Elytra finely punctured.

*Podagrica Psyche.*

Late ovata, convexa, rufo-fulva, nitida, antennis extrorsum infuscatis, oculis nigris, elytris cyaneis.

Long. $1\frac{2}{3}$ lin.

*Hab.*—New Guinea.

Head smooth, impunctate; antennæ nearly equal to the body in length; seven outer joints stained with fuscous; third joint nearly twice as long as the second. Thorax one-half broader than long; sides rounded, anterior angles produced into an obtuse tooth; surface smooth, impunctate. Scutellum trigonate, its apex obtuse. Elytra much broader than the thorax, ovate, distinctly punctured.

Genus Phrynocepha, Baly.

Journ. of Entom. i. 201.

*Phrynocepha Deyrollei.*

Elongata, modice convexa, rufa, nitida, antennis, basi exceptis, scutello, pectore, abdomine, tarsisque nigris; elytris subnitidis, metallico-viridibus.

Long. 3 lin.

*Hab.*—Mexico. A single specimen, formerly in the collection of the late A. Deyrolle.

Head porrect, subquadrate, rugose; carina linear; encarpæ raised, smooth, impunctate; vertex nigro-piceous; antennæ moderately robust, attenuated towards the apex, two basal joints, together with the lower two-thirds of the following joints, rufous. Thorax nearly twice as broad as long at the base; sides rounded and diverging at the base, thence obliquely converging to the apex, anterior angles thickened, subacute; surface transversely excavated at the base, broadly excavated in front on either side the medial line, leaving the latter as a raised longitudinal ridge, coarsely but not closely punctured, the interspaces granulose-punctate. Scutellum trigonate, its apex obtuse; the surface smooth, impunctate. Elytra rather broader than the thorax, subparallel, moderately convex, slightly flattened along the suture; the surface closely granulose-punctate, finely but distinctly punctured; on each elytron near the outer margin are two broad, shallow, longitudinal excavations, which run the whole length of the elytron.

Genus Phygasia, Chevr. MS.

*Corpus* anguste ovatum, aut ovatum, convexum.

*Caput* modice exsertum, *facie* brevi, perpendiculari; *oculis* subrotundatis, intus fere rectis; *carinâ* distinctâ elevatâ; *encarpis* contiguis; *antennis* filiformibus, vel ad apicem attenuatis, articulo secundo brevi, tertio illo duplo longiori, quarto æquilongo. *Thorax* transversus, lateribus rotundatis, reflexo-marginatis, angulis anticis paullo productis, obtusis; disco basi sulco transverso, utrinque abrupte abbreviato, impresso. *Elytra* thorace latiora, modice convexa, distincte marginata, confuse punctata, infra basin non excavata. *Pedes: coxis* anticis prosterno vix altioribus; *femoribus* posticis incrassatis; *tibiis* simplicibus, dorso non canaliculatis, quatuor anticis apice muticis, posticis apice spinâ acutâ armatis; *unguiculis* appendiculatis. *Prosternum* inter coxas angustatum, apice incrassatum; *acetabulis* anticis apertis.

*Phygasia ornata.*

Ovata, convexa, rufo-fulva, nitida, abdomine fulvo, antennis (articulo basali piceo excepto), tibiis, tarsis elytrisque nigris, his tenuiter punctulatis, apice rufo-fulvis, utrisque plagâ magnâ prope medium sordide albâ ornatis; scutello rufo-piceo.

Long. $2\frac{1}{2}$—3 lin.

*Hab.*—Hongkong; collected by Mr. Bowring.

Head shining, impunctate; carina narrow, linear, its apex acuminate; antennæ more than half the length of the body, six or seven lower joints thickened, slightly compressed. Thorax more than twice as broad as long; sides rounded, slightly diverging from the base to the middle; anterior angles produced, obtuse; upper surface smooth, impunctate.

*Phygasia Hookeri.*

Ovata, convexa, pallide castanea, nitida, antennis, oculis, femorum apice, tibiis tarsisque nigris.

Long. $2\frac{2}{3}$—3 lin.

*Hab.*—India (Kaisa Hills); collected by Dr. Hooker.

Head smooth, impunctate; antennæ moderately robust, attenuated towards the apex, six or seven lower joints slightly compressed; eyes black. Thorax twice as broad as long; sides diverging from the base to just beyond the

middle, thence rounded to the apex; surface smooth, impunctate. Elytra finely but distinctly punctured.

## Genus Lypnea.

*Corpus* elongatum, convexum. *Caput* modice exsertum, *facie* perpendiculari; *antennis* filiformibus, corporis dimidio longioribus, articulo secundo brevi, tertio illo vix longiori; *encarpis* transversis, contiguis; *carinâ* lineariformi. *Thorax* transversus, basi sulco transverso, utrinque abbreviato impressus, angulis anticis paullo productis, obtusis. *Elytra* thorace paullo latiora, parallela, punctato-striata, limbo laterali distincte dilatato. *Pedes* simplices; *femoribus* posticis incrassatis; *tibiis* anticis quatuor muticis, posticis apice spinâ brevi acutâ armatis; *tarsis* posticis ad tibiæ apicem insertis; *unguiculis* appendiculatis. *Prosternum* coxis æquialtum apice hastato, dorso carinato; *acetabulis* anticis apertis. *Mesosternum* trigonatum, antice concavum.

Separated from *Lactica* and allied genera by the punctate-striate, costate elytra; from *Diphanlaca* it is distinguished by the form of the thorax, and by the absence of the transverse depression on the elytra.

### *Lypnea flava.*

Elongata, flava, oculis nigris, elytris regulariter punctato-striatis, interspatiis costatis.

Long. 3 lin.

*Hab.*—New Guinea, Batchian.

Head smooth, impunctate; face slightly elevated between the insertion of the antennæ; carina linear; encarpæ transverse, contiguous. Thorax nearly twice as broad as long; sides straight and parallel; anterior angles oblique, thickened, hinder angles armed with a small tooth; above transversely convex, impunctate, impressed in front of the basal margin with a shallow, transverse groove, which is terminated on either side at some distance from the outer border by an indistinct longitudinal impression; lateral margin narrowly reflexed. Elytra rather broader than the thorax, parallel; above regularly punctate-striate; the interspaces thickened, costate; lateral margin narrowly dilated.

Genus Syphrea.

*Corpus* late ovatum, valde convexum. *Caput* thorace immersum; *facie* brevi, perpendiculari; *oculis* ovatis, intus leviter sinuatis; *carinâ* elevatâ, linearifórmi; *encarpis* transversis, contiguis; *antennis* corporis dimidio multo longioribus, articulo secundo brevi, tertio illo dimidio longiori. *Thorax* transversus, lateribus anguste reflexo-marginatis, angulis anticis obtusis; convexus basi sulco transverso utrinque ad latus extenso impressus. *Scutellum* trigonatum. *Elytra* thorace latiora, valde convexa, confuse punctata. *Pedes: coxis* anticis prosterno fere æqualtis, *femoribus* posticis incrassatis; *tibiis* simplicibus, dorso non canaliculatis, singulis apice spinâ acutâ armatis; *tarsis* posticis ad tibiæ apicem insertis; *unguiculis* appendiculatis. *Prosternum* oblongum, postice vix ampliatum; *acetabulis* anticis apertis. *Mesosternum* transversum, apice rotundato-emarginato.

Strongly resembling *Hermeophaga* in form, but distinguished at once from that genus by the basal sulcation of the thorax extending entirely across the surface; from *Sutrea* and its allies it is separated by the above character as well as by the presence of a small acute spine at the apices of all the tibiæ; it may be known from *Haltica* by the very convex form, more especially of the thorax.

*Syphrea pretiosa.*

Late ovata, valde convexa, rufo-fulva, nitida, antennis, basi exceptis, pectore, abdomine, tibiis et tarsis anticis quatuor, pedibusque posticis totis, cæruleo-nigris; elytris metallico-cæruleis.

Long. 3 lin.

*Hab.*—Guatemala.

Vertex shining, impunctate; eyes black; two lower joints of antennæ obscure piceous. Thorax twice as broad as long; sides nearly straight and slightly diverging from the base to the middle, thence rounded and converging to the apex; hinder angles produced, acute; anterior angles thickened, moderately produced, obtuse; above convex, minutely punctured, the puncturing only visible under a lens; at the base is a deep, transverse, sinuate groove, which extends entirely across the thorax; the surface between it and the basal margin at either end, rugose-strigose. Elytra broader than the thorax, very convex, transversely excavated below the humeral callus, distinctly punctured.

Genus Elytropachys, Motsch.

Bull. Mosc. 1866, p. 419.

This genus, formed by Motschoulsky on some Ceylon insects formerly placed by him in *Aphthona*, is easily distinguished from most other genera of *Halticinæ* by the absence of a spine at the apex of the posterior tibiæ; the hinder thighs are also much more slender than usual, and, in my opinion, it is doubtful whether its true position is in that group.

*Elytropachys quadripustulata.*

Ovata, valde convexa, nigra, nitida, tarsis (articulo basali excepto) antennisque fulvis, vertice rufo; elytris infra basin obsolete depressis, utrisque maculis duabus subrotundatis, unâ infra basin, alterâ pone medium positis, rufis.

Long. $3\frac{1}{2}$ lin.

*Hab.*—Singapore.

Head short, vertex smooth, marked with a transverse rufous patch; lower edge of clypeus, labrum and antennæ pale fulvous, the 3rd joint of the latter much longer than the 2nd; carina obsolete; encarpæ transverse, separated from each other by the apex of the clypeus. Thorax more than twice as broad as long; sides rounded, hinder angles distinct, anterior produced laterally into a small acute tooth; upper surface finely and remotely punctured. Scutellum smooth, trigonate. Elytra much broader than the thorax, broadly ovate, more coarsely punctured than the latter; on the outer disk of each, behind the middle, are two short longitudinal costæ. Hinder thighs slightly thickened.

*Elytropachys cæruleipennis.*

Late ovata, valde convexa, nigra, nitida, fronte, scutello, pectoreque piceis; abdomine fulvo, elytris infra basin obsolete transversim depressis, metallico-cæruleis.

Long. $2\frac{2}{3}$ lin.

*Hab.*—Cambodia.

Head smooth, clypeus trigonate, finely punctured, its lower edge, together with the labrum, obscure fulvous; carina obsolete; encarpæ transverse, separated by the apex of the clypeus; four lower joints of antennæ obscure

piceous, the 3rd joint one-half longer than the 2nd. Thorax three times as broad as long; sides rounded, anterior angles produced, the apex obtuse, hinder angles acute; disk very finely and remotely punctured, the punctures only visible under a lens; anterior and posterior margins narrowly edged with piceous. Scutellum trigonate. Elytra faintly depressed below the basilar space, much more coarsely punctured than the thorax.

## VII. *Descriptions of new species of Australian Diurnal* Lepidoptera. By W. H. Miskin.

[Read 2nd August, 1876.]

The following notes, which I beg to lay before the Entomological Society, are descriptive of some insects recently added to my collection, that will, I believe, prove new to science:—

### Family PAPILIONIDÆ, Leach.

### Sub-family Papilioninæ, Swainson.

### Genus Papilio, Linn.

*Papilio Egipius*, n. sp.

*Male.*—Upperside: black. *Primaries:* with a few short dashes of white, bordering on the costa near apex. *Secondaries:* with a broad sulphurish band embracing point of discal cell, on which side the edge of band is straight, and extending outwardly to within a short distance of outer margin, on which side it is crenulated between the nervules, touching anterior margin but not extending abdominally beyond third median branch; immediately above anal angle a single red lunule; outer margin of both wings crenated in white.

Underside: deep black. *Primaries:* with apical dashes almost obsolete. *Secondaries:* with a very small red spot at apical angle, same at anal angle surmounted by largish lunule of same colour; a large red lunule between second and third medians, a very small and imperfect one between first and second, and one barely perceptible between discoidal and first median, all near the margin. Antennæ, head, thorax, and abdomen, all black above and below; the white specks between head and thorax very indistinct.

*Female.*—Upperside. *Primaries:* with the whole of the basal region, the hinder and outer margins, and costa, all black; the veins widely black, and the spaces between with wide bands of black, excepting those between the second and third medians, and third median and submedian, which are quite white; within the cell are also

several stripes of black, the rest of wing clouded white. *Secondaries:* black, with central spot of white nearly touching abdominal margin, digitate on outer side; a marginal row of red lunules, with a very large one above anal angle.

Underside: exactly as on upper, primaries rather whiter. Head, thorax, &c., as in male.

Expanse, ♂, 3″ 7‴—3″ 9‴; ♀, 3″ 4‴.

*Hab.*—Rockingham Bay, Queensland (Kuntsler).

Coll. ♂ and ♀, Queensland Museum; ♂, W. H. Miskin.

This is a very distinct and well-defined species, which has never before, I believe, been met with. It belongs to the *Erectheus* group, from the typical species of which it is at once distinguishable by its much smaller size, and particularly by the absence in the male of the subapical band in primaries, and of the blue markings and most of the red markings on underside of secondaries; and in the female by the much blacker appearance, the absence of the broad disco-cellular band, by the black bands between the nervures in primaries, the absence of the blue markings, and by the limited area of white in the secondaries.

The specimens from which my descriptions are taken were contained in a collection of insects made by Mr. H. Kuntsler at Rockingham Bay (Northern Queensland), during the past season, and was the only new species amongst the *Rhopalocera* therein, although many others of much interest were included. A representative of each sex has gone into our Museum collection; the other two specimens, both males, passed to my own.

## Family NYMPHALIDÆ, Swainson.

### Sub-family Satyrinæ, Bates.

### Genus Xenica, Westwood.

#### *Xenica Kershawi*, n. sp.

Upperside: deep brown, with markings all of rufous. *Primaries:* with two short, transverse bands within the cell, one about the middle, the other and larger one at extremity, another towards the apex, touching the costa; an ocellus near apex ringed with rufous, with small white centre; above the ocellus three small spots, reaching the costa, below and touching the ocellus a large round spot; three small, faint, submarginal spots from apex downwards; three large spots, the centre one of which is the largest, from near posterior angle upwards; a large spot immedi-

ately under and nearly touching central discal band; outer border fringed between the nervules with pale rufous, posterior margin edged with rufous. *Secondaries:* with large anal ocellus, ringed with rufous, white centre; a narrow, submarginal streak from base to anal angle, a shorter parallel one not reaching ocellus; a spot near base; a short, oblique band within cell; a curved, irregular band from costa nearly to ocellus, avoiding the cell; a round spot below apical angle, between this and ocellus two small, oblong patches; near the ocellus two submarginal lunules; two small specks between ocellus and anal angle, surmounted by a larger one; fringed between nervules (which are conspicuously terminated in black) with pale rufous, base of both wings and abdominal margin of secondaries thickly clothed with long, pale-brown hairs; thorax black; abdomen dark brown.

Underside. *Primaries:* very much as above, except that the ground is lighter; the rufous patches somewhat paler, the three towards hinder angle being connected together; above the ocellus the small spots are whitish; a silvery submarginal band from apex more than half-way down the wing. *Secondaries:* with ground colour reddish-brown, all the lighter markings being somewhat similarly disposed as on upperside, but silvery, and more extended; the streaks parallel with abdominal border are four in number, one of which is marginal; the marks near outer margin here form a broken but almost connected border from apical to anal angles; basal and sub-basal patch, the latter extending from costa into and nearly across the cell; and ocellus on costal border near apex, similar to but rather smaller than anal one, which is here the same as on upperside; thorax and abdomen light brown.

Secondaries somewhat angulated.

Expanse, ♂, 1″ 7‴; ♀, 1″ 8‴.

*Hab.*—Victoria (Kershaw).

Coll. W. H. Miskin.

This species is closely allied to *X. Lathoniella* (Westwood), but is abundantly distinct, both by its larger size, the angulated form of the secondaries, and particularly by the very different arrangement of the silver markings on the underside. I am indebted for my specimens to Mr. W. Kershaw, of Melbourne (Victoria), who observes, "This species is found upon or at the foot of high mountains." So far as my experience goes, I believe the species to be confined to the colony of Victoria.

Genus Epinephile, Hübner.

*Epinephile Rawnsleyi*, n. sp.

Upperside: dark uniform brown. *Primaries:* with a black ocellus, with small, pale blue centre, near apex: a larger one of same description between second and third median branches, near margin. *Secondaries:* with an ocellus similar to those on primaries, but widely encircled with ring of orange, near anal angle; a smaller one, also with orange ring, but without the central speck of blue at apex.

Underside: as above, but with faint indication of discal band within the cell of primaries; a faint, whitish ring round both ocelli, and two transverse lines of same character, one submarginal, the other inside of the ocelli. *Secondaries:* with the transverse lines much more decided, the apical ocellus with white centre.

Thorax and abdomen almost black, above and below.

Expanse 2″ 2‴.

*Hab.*—Maroochey River, near Brisbane (Rawnsley).

Coll. Miskin.

My specimen I believe to be unique. It was collected and presented to me by my friend the late H. C. Rawnsley, Esq., to whose memory I propose to dedicate it.

Genus Heteronympha, Wallengr.

*Heteronympha Digglesi*, n. sp.

Upperside: bright reddish-fulvous, with black markings. *Primaries:* with short broad transverse band at termination of cell just touching costa, a short transverse band within, and about centre of cell, connected with base of wing by a longitudinal band which gradually narrows to a point at base of wing; apex with a moderately wide margin extending along costa nearly to the principal discal band, and about a third of way down outer margin; midway down outer margin, an irregularly-shaped patch extending some distance towards disc and inclining upwardly so as to partially encircle, apically, a small simple ocellus, the patch being connected with apical margin by a fine submarginal line, and continued along margin nearly to hinder angle, which latter is narrowly bordered; a square patch on hinder margin near angle; a wide band on hinder margin nearly to base; a square patch between second and third submedians, nearly touching discal band. *Secondaries:* with outer margin, from apex, broadly bor-

dered to a little beyond the discocellular vein, thence to anal angle a submarginal line; between first and second submedians, near to cell, a small patch, and between this and outer margin (which it touches) a larger patch; near anal angle a well-defined ocellus, with ring of paler fulvous; between this and submarginal line, a short inner line from first to third submedians; abdominal margin pale brown.

Underside. *Primaries:* as on upperside, but paler; apical dark markings more extended, and clouded brown, instead of black; ocellus nearly obsolete; discal longitudinal band indistinct. *Secondaries:* clouded brown; a broad band from centre of costa to cell, darker, with lilac hue; region margining median vein towards base and abdominal margin, same colour; two indistinct ocelli near apex, and one towards anal angle.

Expanse 2″ 3‴.

*Hab.*—Brisbane (Queensland).

Coll. Miskin.

A very scarce species, resembling in its habits *H. mirifica*, in company with which very rare insect it has been occasionally taken; it seems to be confined to the Brisbane district, and is only found in dark spots in dense scrubs, where there is an undergrowth of low ferns.

It has been suggested to me that this insect may prove to be the male of *mirifica*, the possibility of the correctness of which surmise I am not prepared entirely to deny, particularly as the various specimens collected have somewhat the appearance of partaking of the character of opposite sexes respectively; but the captures of either species are too limited in number to permit of the arriving at any positive determinations of the point upon this ground. The very different appearance and markings of the two insects, however, will, I think, justify the assumption of specific distinction; and I have therefore much pleasure in naming our insect in honour of my friend Mr. S. Diggles, who was, I believe, the first to discover it.

## Family LYCÆNIDÆ, Stephens.

### Genus Hypochrysops, Felder.

*Hypochrysops Epicurus*, n. sp.

*Male.*—Upperside: uniform shining brown, with violet reflections; base of both wings rather darker. *Primaries:*

with base of costa bronzy. *Secondaries:* somewhat angulated; abdominal margin paler.

Underside: pale shining-brown, with linear markings of brassy green. *Primaries:* with the green markings generally bordered rather indistinctly with pale orange, and often accompanied by black specks; with an outer submarginal row of green markings, inside of which is a corresponding row of black spots, largest towards hinder angle, between these pale orange; another row of green markings from costa not quite across wing, bordered outwardly with pale orange; a subcostal double longitudinal line of green, from base nearly to transverse band, with a short transverse double line branching from it, at end of cell; two spots of black beneath, and close to median vein, before its second and third branches. *Secondaries:* with the green markings in transverse rows of short contiguous lines, generally double, filled in with rich orange; an outer marginal line of green to anal angle, inside of which a narrow band of orange; a basal speck of green, crowned with orange; a sub-basal row of two single lines, bordered inwardly with orange; a discal row of four, double except one near costa, reaching from costa to abdominal margin; an outer row of four, double except upper one, not reaching costa; beyond, two short single lines; a large black spot near anal angle, with a small black speck on each side. Fringe not developed.

*Female.*—Upperside: uniform shining brown, violet-blue at base of both wings. *Primaries:* with base of costa light brown. *Secondaries:* more rounded than in male; with the blue extending over the discal region; a small patch of pale orange at branch of median; the submedian and all the median branches terminated broadly in orange, and rather indistinctly marked in same colour for short distance up; fringe white, intersected with black at termination of nervules, mostly so towards anal angle.

Underside: same as in male, except that orange markings in secondaries are less developed.

Thorax in both sexes black; abdomen pale brown on upperside, light brown on underside.

Expanse 1″ 4‴.

*Hab.*—Brisbane, Queensland.

Coll. Miskin.

In form this species is nearest to *H. ignita* (Leach), but is a much more homely-looking insect.

Genus *Ialmenus*, Hübner.

*Ialmenus Eubulus*, n. sp.

Upperside: pearly white, with slightly opalescent hues. *Primaries:* with costa, apex and outer margin widely dark brown; small black transverse line at termination of cell. *Secondaries:* with the veins brown; outer margin narrowly bordered with brown, gradually decreasing to apex; a submarginal line of white from apical to anal angle; second and third median branches terminating in well developed tails; the first median and submedian forming points but not extended; between the two tails a large crescent of orange surmounting black border, and in the angle a patch of orange; between the orange patches black crowned with white, and above all a faint margin of brown.

Underside: greyish-white. *Primaries:* with outer edge of wing dark brown; a marginal band of pale brown or fawn colour; an inner line of faint brown; a transverse interrupted streak of dark brown; three short discal streaks within cell. *Secondaries:* with edge, band, and transverse streak, as in primaries, the latter being elbowed twice, opposite the tails; a dark speck near base; a short dark streak in cell, one near costa, a longer one at termination of cell; orange spots as on upper side, but rather larger.

Thorax and abdomen: upperside dark grey; underside light grey.

Expanse 1″ 11‴.

*Hab.*—Rockhampton, Queensland.

Coll. Miskin.

VIII. *Descriptions of new genera and species of* Tenthredinidæ *and* Siricidæ, *chiefly from the East Indies, in the Collection of the British Museum.* By Peter Cameron.

[Read 5th July, 1876.]

## TENTHREDINIDÆ.

### *Hylotoma albocincta.*

♀. Dark blue, pilose, the 3rd abdominal segment banded with white all round. Clypeus roundly emarginated; antennæ longer than head and thorax. Wings hyaline, the marginal and submarginal cellules (except at the lower part) smoky; costa dirty white; stigma sordid luteous, darker at the base; tegulæ dirty white. Feet white, four anterior tibiæ entirely and posterior at the apical half dark blue; posterior tarsi fuscescent.

Length 11 lines.

*Hab.*—Nepaul.

*Obs.*—*Hylotoma janthina*, Klug, is in the collection from Java, Nepaul, North India and Sumatra.

### *Hylotoma xanthogaster.*

♀. Deep bluish-black, shining, pubescent; belly, abdomen at the sides, and anus, yellow; palpi black; blotch large; cenchri large, white; anus hairy, terebra projecting. Feet slightly darker than thorax. Anterior wings more or less smoky; posterior pair almost hyaline, 2nd submarginal cellule with a distinct horny point.

Length 6½ lines.

*Hab.*—Nepaul.

### *Hylotoma lutea.*

♀. Dark luteous, pubescent; antennæ and abdomen paler, the latter marked with black transverse dorsal lines separated in the middle; metanotum marked with black. Head deep blue-black. Feet blue-black, darker than the colour of the head; posterior femora more or less sordid luteous above and beneath. Wings dark smoky; costa and stigma black.

♂. Similar, but posterior femora with scarcely any black, and abdomen immaculate.

Comes near to *H. humeralis*, Sm., but has clearer wings, mesonotum devoid of black; coxæ and trochanters black in ♀; in the ♂ the tibiæ are black. From *H. trinotata*, Sm., it differs in having the breast and mesonotum immaculate, and posterior femora marked with black.

Length 6 lines.

*Hab.*—North India.

*Hylotoma microcephala.*

♀. Luteous, pubescent; abdomen paler; antennæ black, testaceous in the middle. Head small, blue-black, a spot on the breast of the same colour; cenchri bordered with black. Feet dark testaceous; femora and tarsi marked with black. Wings deep blue-black, irridescent; posterior wings lighter. Anus blackish.

♂. Antennæ luteous, slightly pilose; feet testaceous; breast scarcely marked with black.

Length 6—7½ lines.

*Hab.*—Amoy.

*Hylotoma flavicollis.*

♀. Deep blue-black, shining; sides of breast to the middle, pro- and meso-notum bright yellow. Wings bluish-black. Broad, thick. Antennæ pilose, a little longer than head and thorax. Blotch large.

Length 9 lines.

*Hab.*—Hong Kong.

*Athalia tibialis.*

♀. Luteous, shining; antennæ, head, posterior half of mesonotum, metanotum, tarsi and posterior tibiæ, four anterior tibiæ above, and sheaths of saws, black. Head covered with a scattered pubescence, palpi pale testaceous, lower edge of clypeus (occasionally) white. Wings smoky; costa and stigma black; tegulæ luteous.

♂ has the two basal joints of antennæ beneath, and apex of clypeus with the labrum, white; the clypeus very hairy, and the calcaria pale.

Length 4¼ lines.

*Hab.*—East Indies.

*Obs.*—An *Athalia* is in the collection, from the west coast of Africa, which I cannot separate satisfactorily from the common *A. rosæ*. Another species of the same genus

from Japan appears to be *A. spinarum*, differing only from the European form in having the black on the thorax broadly divided in the middle.

*Monophadnus rufus.*

♀ and ♂. Rufous; antennæ, from two basal joints, apex of mesonotum with scutellum, metanotum, and terebra at apex, black. Antennæ longish, 3rd joint a very little longer than 4th. Wings blackish, paler at apex; costa and stigma deep black. Marginal nervure received past middle of 3rd submarginal cellule; 2nd submarginal cellule with a black dot.

Aberration b. Meso- and meta-notum, base of abdomen, breast and pleuræ, black. Antennæ with the four basal joints pale-reddish.

Length 7 lines.

*Hab.*—North China.

*Monophadnus cærulescens.*

♂. Dark-blue, half shining, pubescent. Antennæ shorter than body, thick, a little hairy; 3rd joint nearly double the length of 4th. Cenchri large, white. Wings shortish, hyaline; costa and stigma black; a slight cloud below the stigma. Marginal nervure received a little past the middle of third submarginal cellule.

Length 7 lines.

*Hab.*—Nepaul.

*Monophadnus bengalensis.*

♀. Facies of a *Tenthredo*. Blue-black. Feet white; coxæ at base, apex of femora (especially posterior pair), apex of posterior tibiæ and tarsi, black. Clypeus rounded, face very hairy; 3rd joint of antennæ much longer than 4th. Terebra projecting. Wings subhyaline, darkened at apex, marginal nervure received past middle of third submarginal cellule; posterior wings as in *Eriocampa*. Tegulæ black.

Length 7 lines.

*Hab.*—Bengal.

Anisoarthra, gen. nov.

Antennæ covered with long pressed hairs, with 3rd and 4th joints equal, a little dilated at apex; 5th a little longer than 4th, also dilated at apex; 6th nearly a fourth shorter

than 5th, still more dilated at apex, and sharply cut off from 7th, which is much shorter than 6th; two apical joints a little shorter than 7th. Clypeus smooth, straight at apex. Alar neuration of *Monophadnus;* marginal nervure received a little past middle of third submarginal; posterior wings with one middle cellule. Scutellum raised, conspicuous, smooth and shining.

*Anisoarthra cærulea.*

♀. Blue, shining, Head and thorax pilose. Antennæ shorter than abdomen. Terebra projecting, hairy. Spurs long. Wings bluish-black, iridescent; costa and stigma bluish-black.

♂. Similar, but with longer antennæ and wings clearer at base.

Length 7 lines.

*Hab.*—Ceylon.

*Anisoarthra cyanella.*

♀. Bluish-purple, shining, pubescent; similar to *A. cærulea,* but smaller, and colour with a purplish tinge; wings darker, third submarginal cellule shorter; antennæ shorter, more thickened towards the apex, the three apical joints not being so sharply cut off from preceding, and the anterior feet are pale in front.

In the ♂ the antennæ are shorter, more thickened towards the apex; posterior wings darker. The antennæ look not unlike those of *Athalia.*

*Hab.*—Ceylon.

*Eriocampa ruficornis.*

♀. Black. Head and thorax deep and coarsely punctured, opaque; apex of clypeus and antennæ reddish; pronotum marked with red, cenchri white. Abdomen with four segments red; anus reddish; terebra projecting, red. Legs pale testaceous; coxæ, trochanters, femora and apical third of posterior tibiæ black; calcaria pale. Wings hyaline; nervures, costa and stigma pale testaceous; tegulæ black.

Length 7½ lines.

*Hab.*—North China.

The legs are longer than in the European species. Probably the largest species in the genus.

ALLOMORPHA, gen. nov.

Antennæ with the 3rd joint considerably longer than 4th; 5th, 6th, 7th and 8th gradually becoming thickened, shorter and sharply divided from preceding; 9th considerably thinner than and sharply divided from 8th. Clypeus very deeply incised, labrum rounded. Body has the form of *Tenthredo*, but the alar neuration resembles that of *Strongylogaster* (*cingulatus* group). Patellæ not so sharply developed as in the latter genus; basal tarsal joint nearly two and a half times longer than the following; spurs short, thick; posterior tarsi longer than the tibiæ. Abdomen smooth, shining. Breast and pleuræ punctured.

*Allomorpha incisa.*

♀. Antennæ black; three basal and three-fourths of 4th joint clear white. Head black, shining, finely punctured; labrum, clypeus and a border round the eyes white; labrum hairy. Thorax black, pilose. Tegulæ, scutellum and a band below the cenchri, white. Scutellum punctured. Abdomen black; the basal segment and a line down the back, with the anal segment in the middle, dirty white. Wings hyaline; stigma sordid testaceous; costa blackish. Feet sordid yellowish-white; coxæ at base, posterior femora and apex of tibiæ black.

Length 10 lines.

*Hab.*—North China.

ANISONEURA, gen. nov.

Antennæ a little longer than the abdomen, pilose; the 3rd joint a little longer than 4th, the remaining joints shorter; the 5th, 6th and 7th thickened; the 9th conical, thinner than 8th. Clypeus not incised. Wings with two marginal and four submarginal cellules, the two marginal about equal; the second submarginal shorter than the third, which is dilated at apex. Marginal nervure received a little past the middle of third submarginal cellule; first recurrent received in front of middle of second submarginal cellule; second recurrent joined to second submarginal nervure. Lanceolate cellule of *Strongylogaster*. Posterior wings with one middle cellule. Body form of *Macrophya*. Posterior coxæ large.

*Anisoneura stigmaticalis.*

♀. Colour of *Tenthredo erratica*, Sm.; pilose. Antennæ from 4th joint black; three apical segments of abdomen and posterior tarsi black. Wings hyaline, nervures yellowish at base, black at apex; costa and stigma yellow, the latter black at apex. Anterior wings clouded from base of stigma.

Length 9 lines.

*Hab.*—North China.

*Allantus flavomaculatus.*

♀. Black, shining; sides of breast opaque, punctured. Antennæ (except four apical joints), clypeus, labrum, palpi, a spot below the ocelli, edge of pronotum, scutellum, a spot below the tegulæ (sometimes absent), a large round spot at posterior coxæ, sometimes two spots before the scutellum, and a number of spots on sides of abdomen (the abdominal marks sometimes extending across the back), yellowish. Legs yellowish; coxæ at base, apical half of posterior femora and apex of posterior tibiæ with the spurs black. Head pilose, clypeus deeply incised. Wings almost hyaline; costa and stigma black. There is a pale spot over the anal segment.

Length 11¼ lines.

*Hab.*—North China.

The colour appears to have faded, probably through having been kept in spirits.

*Allantus trochanteratus.*

♀ Black; head pilose, sides of breast opaque, punctured. Clypeus, labrum, pronotum and tegulæ, a large square spot over the anus, a small one on each side of the second, third and fourth abdominal segments, yellowish-white; the pronotum and tegulæ have a reddish tinge. Apex of coxæ and trochanters pale yellow; femora black; knees, tibiæ and tarsi reddish, the tarsi annulated with black. Antennæ thickened towards the apex; apex of labrum brownish, hairy; mandibles brownish, palpi white. The third, fourth and fifth abdominal segments are annulated with white in both sexes.

♂ has the labrum entirely white.

Length 8¾ lines.

*Hab.*—North India.

*Pachyprotasis versicolor.*

♀. Head black; the lower part of face (except a black band over the clypeus) and orbits of the eyes whitish-yellow. Clypeus small, incised; labrum large; tips of mandibles black; palpi and two small spots below the ocelli and two basal joints of antennæ white beneath. Thorax black, shining; a line on pronotum, a spot on mesonotum, scutellum, a spot on metanotum, a spot below the tegulæ, on the sides of the breast and sternum, white. Sides of breast opaque, punctured. Abdomen black, basal segment red; spots along the sides, a large spot over the anus and belly, more or less white. Legs red, coxæ and base of femora white; coxæ punctured, with a large black spot on posterior pair, and a white spot over them. Antennæ longish, black, seventh and part of eighth joint white. Wings hyaline; costa and stigma black, the latter pale at the base.

Length $8\frac{1}{2}$ lines.

*Hab.*—North India.

*Macrophya rotundiventris.*

♂. Antennæ about the length of the abdomen, thin, black, two basal joints whitish-yellow. Head deep black, covered with long hairs; labrum and clypeus whitish-yellow, mandibles piceous. Pro- and meso-thorax to the cenchri and to the middle of the sides beneath reddish, with two black spots in front of scutellum; metathorax black. Abdomen cylindrical, sordid yellow, black at the sides above and at the anal segments; belly and sides pale yellow. Feet pale yellow; a short line above middle femora, posterior femora entirely above, base of coxæ, and apical half of posterior tibiæ, black; posterior tarsi thickish, hairy. Wings hyaline; costa and stigma testaceous; apex smoky.

Length 11 lines.

*Hab.*—North India.

*Tenthredo incerta.*

♀. Black, shining, with a bluish tinge. Head smooth, shining, covered with white hairs. Pronotum, sides of breast and metanotum red; second and third abdominal segments banded with white; blotch very large. Terebra projecting, hairy. Antennæ short, thick, pilose; two basal joints large, third much longer than fourth. Legs white; apex of coxæ, greater part of femora and apical

third of posterior tibiæ and tarsi black. Wings subhyaline, with a deep black splash below the stigma; costa hairy.

Length 8½ lines.

*Hab.*—Burmah.

The lanceolate cellule does not agree with that of *Tenthredo*, it having an oblique cross line as in *Emphytus*, &c.; but I cannot find other characters to separate it from *Tenthredo*. It may form a new subgenus.

*Tenthredo amoorensis.*

♀. Black, shining, mouth below the antennæ, inner orbits of the eyes, tegulæ and pronotum white. Abdomen from second to the three last segments reddish. Feet pale testaceous, inclining to white; two anterior femora at base, posterior almost wholly and apex of tibiæ black; trochanters pale, tibiæ and tarsi whitish; tips of tarsi fuscous, calcaria long. Antennæ shortish, black above, pale testaceous beneath; third joint longer than fourth. Wings hyaline; costa pale, stigma fuscous; a black narrow cloud extending from stigma to base of wing. Mandibles black.

Length 5¼ lines.

*Hab.*—Amoor.

Belongs to *Perineura* (*Aucupariæ* section), as defined by Thomson.

*Tenthredo metallica.*

♀. Metallic green, shining; abdomen bluish above. Feet dark blue; tarsi longer than tibiæ. Antennæ with a purplish tinge, longer than abdomen, tapering towards the apex; the basal joint long, thick. Head depressed considerably between the eyes, which are small, the antennæ proceeding from sharp ridges. Anterior wings black, fainter at apex; posterior hyaline.

Length 13 lines.

*Hab.*—North India.

*Tenthredo clypeata.*

♀. Similar to *metallica*, but colour dingier; antennæ shorter, thicker, the joints not tapering so much towards the apex, and shorter in proportion, the third joint considerably longer than fourth; the head not so deeply depressed inwardly above, and behind the eyes: the ocelli a little more raised, the clypeus clear white and a little smaller.

*Hab.*—North India.

*Tenthredo xanthoptera.*

♀. Reddish-yellow; antennæ, except two basal joints, posterior tibiæ and tarsi, black. Wings yellowish, nervures and costa yellow; apex of wing clouded with a black inky cloud in both wings proceeding from the stigma. Mandibles black.

Length 13¼ lines.

*Hab.*—Nepaul.

*Tenthredo trimaculata.*

♀. Sordid luteous, punctured; antennæ from fourth joint, three marks on mesonotum and thorax beneath black. Mesonotum opaque, sides of breast closely punctured and pilose; clypeus arched. Wings hyaline; costa and stigma sordid luteous; second submarginal cellule with a black dot; nervures black.

Length 10½ lines.

*Hab.*—North China.

*Tenthredo melanotarsus.*

♀. Of similar size and colour to *T. erratica*, Sm., from Japan, but antennæ black (except the two basal joints) and a little longer; head devoid of black, clypeus more deeply and sharply incised and sordid white; no marks on thorax either above or beneath; posterior tarsi black, the apex of abdomen purplish black. Wings yellower, with the nervures yellow, and the apical cloud in the wings with a purplish tinge.

*Hab.*—North China.

*Tenthredo xanthotarsus.*

♀. Similar in size and colour to *melanotarsus*, but posterior tarsi not black; nervures of wings black, with the apical cloud and the yellow colour fainter; clypeus not so deeply notched and bright yellow; the apex of abdomen black, but without a purple tinge, and a black line over posterior femora.

From *T. erratica* it is known by the black antennæ (except at the base) and the absence of black on thorax, &c.

*Hab.*—Japan.

*Tenthredo xanthopus.*

♀. Antennæ black, pilose, apical joints thicker than basal; at the base white, and the basal joint has a short

peduncle. Mouth, clypeus and labrum with the lower orbits of the eyes white; clypeus slightly arched, vertex covered with longish hairs. Thorax black; pronotum, scutellum, part of metanotum, and a large part of the sides of thorax in the middle, yellowish; pleuræ smooth, shining; abdomen sordid yellow, with a broad black border above and surrounding the anal segments; terebra black, hairy, projecting. Feet yellowish-white, four anterior tarsi annulated with black; a line above the apical half of middle femora, tibiæ and tarsi, a line above posterior femora, and posterior tibiæ and tarsi, totally black. There is also a black line over posterior coxæ. Wings hyaline, iridescent; costa and stigma black, hairy. Clypeus slightly incised. Tips of mandibles black.

Length 8½ lines.

*Hab.*—Japan.

The colour has faded.

*Tenthredo indica.*

♂. Antennæ nearly as long as the body; the 3rd joint a very little longer than the 4th, black; the 5th and base of 6th (in one antenna only) white; four last joints somewhat thicker than the others. Head black; sutures distinct; lower part of face with a broad, white band round the eyes (but not behind); mandibles black, clypeus slightly incised; palpi white. Thorax black, finely punctured; edge of pronotum, a spot below the tegulæ under the wings, a large spot under posterior wings, edge of tegulæ, a triangular spot in middle of mesonotum, scutellum, and two small spots behind scutellum, white. Abdomen black, marked at the sides and across with white. Legs white, coxæ at base, four anterior femora above, posterior totally, apical half of tibiæ (the anterior tibiæ are white beneath), and the apical joints of tarsi, black; calcaria black; posterior tarsi very hairy. Wings hyaline; costa and stigma black.

Length 9 lines.

*Hab.*—North India.

*Tenthredo flavobalteata.*

♀. Antennæ black, two basal joints white. Head black, smooth, shining; clypeus and labrum white. Mandibles black. Thorax black, pronotum edged with white; tegulæ testaceous. Abdomen black; the two middle

segments yellow. Feet yellow; coxæ at base, middle femora above, posterior almost wholly, apex of posterior tibiæ, with the tarsi at the joints, black. Wings hyaline, with a small smoky cloud at the apex; costa and stigma fuscous. Legs covered with scattered hairs.

Length 10½ lines.

*Hab.*—North China.

Allied to *T. bicincta*, Linn.

*Tenthredo obscura.*

♀. Pale olive, not unlike the colour of *T. olivacea*, but more faded. Antennæ about the length of the abdomen; apical joints whitish, except the last, which is black; 3rd joint considerably longer than 4th; clypeus deeply incised, paler than the colour of the head. Abdomen about a fourth longer than the head and thorax, dilated at apex. Femora black above at the base; a line above the four posterior tibiæ and joints of tarsi black. Legs hairy. Spurs black. Ocelli black.

Length 12¼ lines.

*Hab.*—North China.

Has a faded look, as if it had been pure yellow when alive.

*Dolerus rufocinctus.*

♀. Deep black, with a bluish tinge, pilose. Pro- and part of meso-notum in front, tegulæ, and second to sixth abdominal segments, red. Wings hyaline; costa and stigma deep black; basal part of costa yellow. Apex of abdomen and head densely covered with long white hairs. Head coarsely punctured.

Length 6—7 lines.

*Hab.*—India.

*Dolerus bicolor.*

♀. Black. Head deep, coarsely punctured, glabrous, covered with a scattered pubescence; clypeus incised. Pro- and anterior edge of meso-notum above and beneath, and abdomen from basal segment, yellowish-red. Meso-notum opaque, punctured; terebra projecting, black, hairy. Wings deep smoky, hyaline at apex; posterior wings lighter; costa and stigma deep black; tegulæ black; cenchri white; calcaria pale.

Length 10 lines.

*Hab.*—North China.

*Dolerus affinis.*

♀. Of similar colour to *D. ephippiatus*, Sm., but smaller; antennæ shorter, thinner; underside of thorax bluish-black, not reddish; a black spot in front of meso-notum; head a little more closely punctured; feet, head and breast not so pilose, and wings a little darker.

*Hab.*—China.

*Dineura* (?) *africana.*

♂. Black; antennæ pilose, 3rd joint longer than 4th, basal joint large, furnished at base with a short white peduncle. Head large; clypeus small and very deeply incised; labrum large, hairy; palpi white. Thorax smooth, shining, tegulæ black; a spot below the wings white. Legs white, posterior tarsi fuscous. Wings half smoky; marginal nervure received a little past the middle of third submarginal cellule; first recurrent nervure received near the middle of second submarginal cellule, and second recurrent near the apex of third submarginal cellule; third submarginal cellule considerably dilated. Posterior wings with two middle cellules; anterior wings with neuration of *Blennocampa*.

Length 6 lines.

*Hab.*—Sierra Leone.

This species will, I think, prove to be the type of a new genus, having affinities with *Blennocampa*. I place it temporarily in *Dineura*, as the alar neuration comes nearest to that genus.

## SIRICIDÆ.

*Tremex Smithi.*

♀. Bluish-black, with a purplish tinge, roughly and deeply punctured. Head, feet and apex of abdomen covered with long hairs; on the face the long hair hangs down like a beard. Abdomen marked with white along the sides; base of posterior femora above and base of tarsi white. Terebra brownish. Wings short, blackish, pale hyaline at base. Apex of abdomen at the sides acutely serrated.

Length 15½ lines.

*Hab.*—North India.

In one of the anterior wings in the lanceolate cellule, instead of the usual cross nervure there is a small triangle,

the other wing having the normal neuration. Comes near to *T. pandora*, Westw., but differs in the white markings, &c. I have dedicated the species to Mr. F. Smith, of the British Museum.

*Sirex xanthus.*

♀. Reddish-yellow; head and abdomen paler, punctured, covered with long hairs; mouth parts brownish; space between and above the antennæ brown, extending to the back of the head in a narrow black line. Sutures of mesonotum and metanotum black. Thorax beneath and at sides fuscous-black, with a large yellow spot below the tegulæ. Antennæ and feet yellow. Wings fuscous-yellow; costa yellow, stigma black. Anal segment with a black line. Terebra reddish-yellow, of the same size as in *S. gigas*.

Length 19 lines.

*Hab.*—North India.

## IX. *Descriptions of new species of Hymenopterous Insects of New Zealand, collected by* C. M. Wakefield, Esq., *principally in the neighbourhood of Canterbury.* By Frederick Smith.

[Read 7th June, 1876.]

Thirty new species of *Hymenoptera* are described in the present paper, nearly all having been taken in the Canterbury Province of the south Island; thus a large area is left much less carefully entomologically explored. It may, therefore, I think, be confidently expected that, when the north Island has been worked as well as the south, at least double the number at present discovered will be added to the Hymenopterous fauna of New Zealand. Captain Hutton, in his observations on the indigenous insects, observes, "the *Hymenoptera* are poorly represented, about eighteen species only being yet known." The addition now made to the list increases it to forty-eight.

The *Hymenoptera* are less diligently collected than the more popular orders, but I feel confident that the list will ultimately number, if it do not exceed, one hundred species. The *Formicidæ* must surely consist of more than five species, the number at present discovered, and the fossorial group will in all probability prove to be much more extensive. Of the bees but few species are known, but the genus *Megachile* must, I imagine, find some representative species, since several have been found in Tasmania, and Australia has at present yielded about forty species. No species of *Scolia* has yet been discovered, although both the above-named countries have several indigenous representatives of the genus; these localities have also produced many species of *Mutillidæ*, but not a single species has, to my knowledge, been found in New Zealand; not a single wasp has been taken, but I fully expect species of the genus *Odynerus* will be discovered, it being well represented in Australia, and a few species have come from Tasmania likewise.

Mr. Wakefield's collection contained nearly all the species previously described, and two of *Tenthredinidæ*,

one being the *Blennocampa adumbrata*, Klug; this may be the same insect recorded by Captain Hutton under the name of *B. cerasi*; this European species has doubtless been imported with trees or flowers. In the Reise der Novara, Dr. Sichel has described a species of *Prosopis*, no doubt the first from New Zealand; three are added to the list in the present paper. It is somewhat remarkable that only one species of the family *Thynnidæ* should have been discovered, *Rhagigaster Novaræ*, described by De Saussure; as both Tasmania and Australia are rich in species. The genera *Rhyssa*, *Mesostenus* and *Derecyrta*, I believe are for the first time added to the Hymenopterous fauna of New Zealand, the first by one of the finest species of the genus hitherto discovered.

## TENTHREDINIDÆ.

### Fam. SIRICIDÆ.

*Derecyrta deceptus.* (Pl. IV. fig. 6.)

Female.—Length 5 lines. Ferruginous, abdomen rufo-fulvous, variegated with yellowish-white. Head globose, shining, and with scattered punctures; a broad yellowish-white line round the orbits of the eyes, slightly interrupted at their vertex; two lines of the same colour run longitudinally over the vertex, and unite with another line that borders its posterior margin; the clypeus and mandibles yellowish, the latter obliquely truncate, and with four black teeth; the flagellum black, except its basal joint and the curved scape, both of which are ferruginous. Thorax: the prothorax forming a short neck; a line on each side of its posterior margin running to the base of the wings; two oblique stripes on the mesothorax inclining inwardly, and uniting with a transverse waved stripe at its basal margin, two spots on the scutellum and also the post-scutellum, yellowish-white; wings fulvo-hyaline, the nervures ferruginous, the stigma fuscous; a large yellowish spot beneath the wings, and the posterior coxæ pale beneath; the legs pale ferruginous. Abdomen yellowish towards the base.

Prof. Westwood has figured three species of this genus in his "Thesaurus Entomologicus Oxoniensis," two of which are from Brazil, the other from Chili. This species bears a very strong resemblance to *Tenthredo nassata* of Linnæus.

## PUPIVORA.

### Ichneumonides.

*Ichneumon perfidiosus.* (Pl. IV. fig. 5.)

Male.—Length 6—7 lines. Head and thorax black; abdomen red, with the apex black. Head: a triangular yellow spot at the inner orbit of the eyes opposite the anterior ocellus; the clypeus, mandibles and palpi ferruginous, the later palest; usually a minute ferruginous spot on the scape in front, sometimes obsolete. Thorax: the lateral margins of the prothorax, the scutellum, post-scutellum, sometimes a spot also on the disk of the mesothorax, yellow or reddish-yellow; two ovate yellow spots beneath the wings; occasionally a reddish spot on the metathorax in the enclosed horseshoe-shaped space at its base; wings slightly fulvo-hyaline, the nervures fuscous, the stigma and nervures at the base of the wings pale ferruginous; legs pale ferruginous, with the coxæ and trochanters black. Abdomen smooth and shining, with three, but sometimes four, of the basal segments ferruginous.

Var. B.—The fourth segment more or less red.

*Ichneumon invectus.*

Female.—Length 5—5½ lines. Black; mandibles ferruginous towards their apex, the palpi pale rufo-testaceous. Thorax shining, the mesothorax with a few very fine scattered punctures; the scutellum and post-scutellum ferruginous; wings fulvo-hyaline, the nervures pale ferruginous; the legs fulvo-ferruginous, rather stout, with the coxæ and trochanters black. Abdomen shining, impunctate, with the two basal segments fulvo-ferruginous; the base of the petiole black.

*Ichneumon conspiratus.*

Female.—Length 4½ lines. Ferruginous, with the apex of the abdomen black. Head: a black or dusky spot on the face on each side of the clypeus; the antennæ fuscous above. Thorax: two narrow lines on the mesothorax anteriorly; the scutellum, post-scutellum, and two spots on the metathorax, yellow; the mesothorax and head closely and rather strongly punctured, the metathorax smooth and shining; the wings fulvo-hyaline, their nervures rufo-

testaceous; legs ferruginous, of a lighter red than the thorax; the posterior coxæ greatly swollen and yellow above. Abdomen smooth and shining, with the three basal segments red, the rest black.

*Ichneumon placidus.*

Female.—Length 4 lines. Ferruginous, with the head and thorax more or less black. Head black, the orbits of the eyes white; the clypeus, cheeks and scape in front ferruginous; the mandibles white. Thorax smooth and shining; the prothorax above, and the anterior portion of the mesothorax, black; the margin of the prothorax, two longitudinal stripes on the mesothorax, the scutellum and post-scutellum, white; wings fulvo-hyaline, the nervures pale rufo-testaceous; the legs ferruginous, with a white spot on the coxæ above, also a longitudinal white line beneath the wings. Abdomen smooth and shining.

*Ichneumon insidiator.*

Male.—Length 6—7 lines. Black; a yellow spot on each side of the face, and a smaller one beneath the insertion of each antennæ; the palpi pale flavo-testaceous; the flagellum fulvous beneath; sometimes a fulvous spot on the scape beneath. Thorax: the scutellum, tegulæ, and an oblong spot beneath them, yellow; wings fulvo-hyaline, the nervures and stigma pale ferruginous; the legs flavo-rufous, the tibiæ and tarsi palest; the extreme apex of the posterior femora and tibiæ fuscous. Abdomen: the apical margin of the basal segment, and the second and third segments, flavo-rufous.

Var. B.—The minute spots on the face, beneath the scape of the antennæ, frequently obsolete.

This is very probably the male of *Ichneumon lotatorius*, of Fabricius.

*Ichneumon consanguineus.*

Male.—Length 6—7 lines. Black; the flagellum of the antennæ fulvous beneath. Thorax: a transverse yellow line beneath the wings; the stigma and nervures of the wings ferruginous; the wings pale fulvo-hyaline; the legs fulvo-ferruginous; the coxæ, trochanters and tips of the posterior femora and tibiæ black. Abdomen: the second and third segments fulvo-ferruginous.

*Ichneumon exhilaratus.*

Male.—Length 6½ lines. Ferruginous, and variegated with yellow. Head: the front, below the antennæ, the mandibles and scape in front, yellow; the flagellum, and scape behind, black. Thorax: the scutellum, post-scutellum and tegulæ yellow; wings fulvo-hyaline, with the nervures black, the latter pale ferruginous at the base of the wings; the anterior and intermediate legs yellow, with their coxæ ferruginous; the posterior femora, trochanters and coxæ ferruginous, tibiæ and tarsi yellow. Abdomen ferruginous, with the basal segment yellow.

*Ichneumon deceptus.*

Female.—Length 6½—7 lines. Head and thorax black, abdomen ferruginous. The inner orbits of the eyes above the antennæ, and sometimes a spot on each side of the clypeus, close to the eyes, yellow, the latter spot frequently obsolete; the scape in front and the mandibles ferruginous. Thorax: the lateral margins of the prothorax more or less yellow; two ovate spots beneath the wings, the scutellum and post-scutellum, and a spot on the posterior coxæ above, yellow, the latter sometimes obsolete; wings flavo-hyaline, the nervures fusco-testaceous, the inferior margin of the stigma and the nervures at the base of the wings pale ferruginous, occasionally a yellow spot on the disk of the thorax; legs ferruginous, the coxæ being more or less black. Abdomen ferruginous, impunctate, smooth and shining, sometimes a little inclined to become fuscous towards the apex.

This is a variable insect; in some examples there is a yellow or ferruginous spot on the metathorax, situated in the horseshoe-shaped enclosed space; other specimens have the two apical segments of the abdomen black, or more or less so; a series of examples present other slight variations.

CRYPTIDES.

*Mesostenus albopictus.* (Pl. IV. fig. 1.)

Female.—Length 5—7 lines. Black, variegated with white lines and spots; legs ferruginous, black, and white. Head: orbits of the eyes white, interrupted at the vertex; the front below the antennæ and the palpi white; joints 8—12 of the antennæ white, sometimes the 13th also. Thorax: a line on each side of the prothorax, five large

maculæ on the sides of the mesothorax beneath the wings, a subquadrate one on the sides of the metathorax, white; a spot on the mesothorax above, the scutellum and post-scutellum, and a large trilobate spot at the apex of the metathorax, white; wings hyaline, the nervures black; legs ferruginous, the anterior tibiæ swollen; the anterior coxæ white, the intermediate pair sometimes more or less so, and also the posterior tarsi, the base and apex of the latter black; the tips of the posterior femora and apical half of the posterior tibiæ black. Abdomen: the apical margin of all the segments white.

Male.—This sex closely resembles the female, and has joints 13—19 of the antennæ white.

Taken in North Island by J. D. Enys, Esq.

### Ophionides.

#### *Ophion inutilis.*

Female.—Length 4¼ lines. Rufo-ferruginous; the basal portion of the antennæ, to the extent of about one-third of their length, ferruginous. The prothorax, the scutellum and the tibiæ and tarsi paler than the rest of the thorax; the wings hyaline and iridescent, the nervures fuscous, more or less ferruginous at the base of the wing; the stigma pale rufo-ferruginous. Abdomen rufo-fuscous towards the apex.

#### *Ophion peregrinus.*

Female.—Length 7 lines. Rufo-ferruginous; a narrow line at the inner orbits of the eyes, and a broad one behind them, yellow: antennæ black, with the scape and two basal joints of the flagellum rufo-ferruginous. Thorax: the anterior margin of the prothorax, the tegulæ, and a spot beneath the wings, another beneath the posterior wings close to the intermediate coxæ, the sides of the metathorax, and the scutellum and post-scutellum, yellow; the wings hyaline and iridescent, the nervures fuscous, all the nervures more or less ferruginous at the base of the wings as well as the stigma; the claws of the tarsi black. Abdomen more or less fuscous at the apex beneath.

#### *Paniscus ephippiatus.*

Female.—Length 6½ lines. Rufo-ferruginous; the space between the ocelli black; the apical third of the antennæ fuscous; tips of the mandibles black. Thorax: the meso-

thorax black; the metathorax transversely finely striated; wings hyaline and iridescent, the stigma, costa and nervures dark fuscous; the claws of the tarsi black. Abdomen rufo-ferruginous to the extent of the two basal segments, from thence fusco-ferruginous, becoming gradually darker to the apex; the ovipositor black.

### Pimpilides.

*Rhyssa antipodum.* (Pl. IV. fig. 4.)

Female.—Length 15 lines; of the ovipositor 27 lines. Dark ferruginous, variegated with yellow. Head: the orbits of the eyes, slightly interrupted opposite the insertion of the antennæ, and the clypeus, yellow; the palpi rufo-testaceous; the apical third of the antennæ yellowish-white, the apex fuscous. Thorax: the mesothorax transversely rugose-striate; the lateral margins of the prothorax, the tegulæ, and a spot beneath the wings, the scutellum, post-scutellum, and the apical half of the metathorax, yellow; wings hyaline or faintly fulvous, the nervures black; legs ferruginous; the anterior and intermediate coxæ and trochanters and the posterior trochanters, yellow. Abdomen smooth and shining, at the apical margin of the first and second segments a yellow fascia, which emits a short yellow line in the middle; each of the four following segments have a longitudinal oblong spot in the middle, and also an elongate one laterally; the sixth has two yellow spots, and the two following segments have their posterior margins yellow, extending to the apical segment also, which has two additional yellow lines beneath the spot.

This species has a close general resemblance to the *Pimpla clavata* of Fabricius.

Two specimens from the North Island, and one taken on a black birch-tree at Oxford, near Christchurch.

## EVANIIDÆ.

*Fœnus crassipes.*

Female.—Length 5 lines. Black, the abdomen variegated with sericeous-grey pile. Head subglobose, the front covered with a thin silvery-white pubescence; the anterior margin of the face and clypeus, and also the tips of the mandibles, ferruginous; the latter bidentate at the apex, and having a strong acute tooth towards their base on the inner margin. Thorax: the mesothorax trans-

versely striated, with two oblique ferruginous sutures that meet at the scutellum, the latter subrugose; the hinder margin of the prothorax with a fringe of silvery-white pubescence; the wings hyaline and iridescent, the nervures black, the stigma pale testaceous; the femora and tibiæ ferruginous beneath, as well as the intermediate and posterior coxæ; the posterior legs incrassate, their tibiæ being clavate; all the tarsi ferruginous. Abdomen clavate and covered with silvery-grey pile, the apical margins of the segments rufo-piceous, the abdomen having a tessellated appearance.

*Fœnus unguicularis.* (Pl. IV. fig. 8.)

Female.—Length 5½ lines. Black, the abdomen tessellated, with sericeous-grey pile. Very like the preceding species, from which it differs in being rather larger, the abdomen more elongate and much more attenuated at the base; the anterior margin of the face and clypeus not ferruginous. The mesothorax not so strongly striated, and the oblique sutures not at all, or very faintly ferruginous; the wings have the nervures blacker, the stigma is also darker; the legs resemble those of the *F. crassipes*, but the claws of the posterior tarsi are long and curved, being twice as long as in that species; they are ferruginous.

The male closely resembles the female, but its legs are black, the abdomen elongate and only slightly clavate; the legs are also more slender.

## MYRMICIDÆ.

*Tetramorium nitidum.*

Female.—Length 3½ lines. Black, smooth and shining; mandibles obscurely ferruginous; a longitudinal impressed line in front of the anterior ocellus, which emits a channel to the insertion of each antenna, at about half its length. The thorax oblong-ovate; the metathorax with a central, longitudinal, deep sulcation, which is smooth and shining; wings subhyaline and iridescent, with the nervures testaceous. Abdomen ovate, smooth and shining; the first joint of the petiole clavate, the second subglobose.

Worker.—Length 2 lines. Jet black, smooth and shining; mandibles ferruginous. Thorax oblong, rounded anteriorly and very convex, compressed posteriorly and strangulated; the metathorax deeply grooved posteriorly and subdentate; the tips of the femora slightly ferruginous;

abdomen ovate, smooth and shining; the first joint of the petiole clavate, the second globose.

Male.—Length 2¼ lines. Jet black, smooth and shining; Head subopaque, pubescent and longitudinally striated. The mesothorax with a few abbreviated striæ in front, and, as well as the scutellum and metathorax, smooth and shining; the latter deeply sulcated posteriorly; wings subhyaline and iridescent, with the nervures testaceous. Abdomen and nodes of the petiole smooth and shining.

Taken at Peel Forest, at Oxford, and at Lake Coleridge.

*Tetramorium striatum.*

Female.—Length 4 lines. Black: head nearly as wide as the thorax, and longitudinally striated; the mandibles bidentate, and, as well as the apex of the apical joint of the antennæ, ferruginous; the extreme apex of the scape, and also of the base of the flagellum, usually more or less ferruginous. Thorax: longitudinally striated, the base of the metathorax finely transversely so; the metathorax bidentate, with a deep, smooth sulcation between; the trochanters, tips of the femora, and the tarsi, rufo-piceous. Abdomen smooth and shining, and having a few scattered pale fulvous hairs; the nodes of the petiole striated. The wings subhyaline, the nervures fusco-ferruginous; the thorax oblong-ovate.

Worker.—Length 2¾ lines. Black, sometimes more or less obscurely rufo-piceous; the head smooth and shining; the mandibles and front ferruginous, varying much in the depth of colouring; the apical joint of the antennæ more or less rufo-piceous. Thorax oblong, strangulated in the middle; the prothorax rounded in front, slightly transversely striated above, as well as the metathorax, which is bidentate; the legs more or less brightly fusco-ferruginous. Abdomen smooth and shining, ovate, and with a few scattered pale hairs.

Male.—Length 3½ lines. Black and shining; the head pubescent, transverse, longitudinally striated, with the eyes prominent. The mesothorax and scutellum longitudinally striated, the former smooth and shining anteriorly; the metathorax shining, and longitudinally sulcate; the wings subhyaline, the nervures testaceous. Abdomen: the first node of the petiole clavate and slightly striated, the second also striated and globose; the abdomen smooth and shining.

Taken on the west coast of South Island, at Peel Forest, and at Kelly's Creek.

## POMPILIDÆ.

### *Priocnemis conformis.*

Female.—Length 4 lines. Head and thorax black, abdomen ferruginous. The head covered with short, fine, golden pubescence, which is most dense and bright on the face; the apical half of the mandibles ferruginous; the palpi pale ferruginous; the antennæ black. Thorax covered with short, bright-golden pubescence; the metathorax rounded; the coxæ, trochanters, and two apical joints of the tarsi, black; wings pale fulvo-hyaline, pale fuscous from the stigma to the apex, the cloud crossing both wings; the nervures ferruginous towards the base and fuscous at the apex of the wings. Abdomen smooth and shining, with the extreme base black.

Male.—Rather smaller than the female, similar in colour and pubescence, but more slender; the fourth and following segments black.

### *Priocnemis maculipennis.*

Female.—Length 5 lines. Head and thorax black, abdomen and legs ferruginous. The front covered with golden pile; the anterior margin of the clypeus, the three basal joints of the antennæ, the palpi and mandibles, ferruginous; the palpi pale; the base of the mandibles, and tips of the joints of the antennæ, black. The thorax covered with short, decumbent, golden pubescence, usually more or less abraded on the mesothorax, and thin and sparing on the pectus; wings fulvo-hyaline, the nervures pale ferruginous; the stigma black, from which a pale fuscous fascia crosses the wings to the middle of the third discoidal cell; the claw-joint of the tarsi black; the legs very slightly spinose; those on the posterior tibiæ very short, fine and placed in rows at the side of a slightly-raised longitudinal carina. Abdomen smooth and shining.

This insect, of which I have seen two examples, is very like the common *P. ferox*, described by Fabricius, but the metathorax is of a different form, being rounded, and not swollen at the sides or so abruptly truncate; the fascia on the wings, almost smooth legs, and black apical joint of the tarsi, characterize more than a variety.

Taken at Peel Forest.

*Priocnemis diligens.* (Pl. IV. fig. 3.)

Female.—Length $5\frac{1}{2}$—6 lines. Black, the legs ferruginous. Head smooth, slightly shining, very minutely and delicately punctured, an impressed line running from the anterior ocellus to the insertion of the antennæ; the front thinly covered with golden pile; the mandibles ferruginous beyond the middle, with the apex black. Thorax slightly shining; the sides and the metathorax with a thin faintly golden pile, frequently obliterated on the metathorax; wings fulvo-hyaline, but fuscous beyond the stigma; the nervures pale ferruginous at the hyaline portion of the wings; the claw-joint of the tarsi black; the coxæ black. Abdomen smooth and shining, with the extreme apex ferruginous.

Var. B.—The abdomen with irregular ferruginous stains.

Three specimens examined.

Taken at Peel Forest.

*Priocnemis marginatus.* (Pl. IV. fig. 2.)

Female.—Length $4\frac{1}{4}$—$6\frac{3}{4}$ lines. Head and thorax black, abdomen ferruginous. The head clothed with short decumbent golden pubescence; a central ovate spot on the clypeus and the mandibles ferruginous, the latter black at their apex; the spot on the clypeus varies in shape, sometimes being angular or transverse; the antennæ black. Thorax clothed with a similar pubescence as the head, but usually more or less abraded on the disk; the legs ferruginous, with their coxæ black and covered with a thin golden pile; the claw-joint of the tarsi black; wings fulvo-hyaline, the nervures pale ferruginous; the apex of the wings with a broad dark fuscous border extending to the middle of the marginal cell and crossing both wings, but with a hyaline incision at the lower margin of the third discoidal cell. Abdomen smooth and shining.

Male.—Length $4\frac{1}{2}$ lines. Only differs in being more slender, the antennæ not being convolute; the spot on the clypeus obsolete; the dark margin of the wing not incised; the fourth and following segments black.

Taken on the west coast, South Island.

## CRABRONIDÆ.

*Rhopalum perforator.*

Female.—Length $4\frac{1}{2}$—6 lines. Black and shining, the legs variegated with yellow. Head very closely and finely

punctured; an impressed line runs from the anterior ocellus to the antennæ; the clypeus covered with bright silvery pubescence; the mandibles and scape of the antennæ yellow, the latter sometimes with more or less of black behind. Thorax closely and very finely punctured; the metathorax with a deep longitudinal central channel; the enclosed triangular space at its base impunctate; the space beyond smooth, and with only a few very delicate punctures; just above the insertion of the abdomen a few transverse striæ; the sides with a little silvery-white pubescence; wings subhyaline, darkest towards their apex; the post-scutellum yellow, sometimes two yellow spots on the scutellum; the anterior femora, except at the base, the tibiæ, the basal and apical joints of the tarsi, yellow; the intermediate legs, with the apical half of the femora beneath, the tibiæ at the base and more or less in front, and the base of the first joint of the tarsi, yellow; the posterior tibiæ clavate, and with a few spines on the outer margin of the club yellow at their base. Abdomen clavate, smooth and shining; the apical segment punctured and margined laterally.

Male.—Very like the female; differs in having the flagellum fulvous beneath, beyond the second joint, in other respects the same.

The second and third segments of the abdomen are sometimes more or less ferruginous.

*Rhopalum carbonaria*, Smith, Cat. Hym. Ins. pt. iv. 424, is figured; it resembles the *R. perforator*, but is a larger and more conspicuous insect (Pl. IV. fig. 7, ♀).

## ANDRENIDÆ.

### *Prosopis agilis.*

Female.—Length 3½ lines. Black; head subopaque, very closely and finely punctured; when viewed in front, nearly quadrate; a yellow macula on each side of the face which is broad and truncate opposite the insertion of the antennæ, and narrows to a point at the base of the mandibles; the flagellum, except two or three of the basal joints, fulvous beneath. Thorax slightly shining, very finely and closely punctured above; the metathorax smooth, shining and impunctate; wings subhyaline, the nervures black; an interrupted line on the collar, and the tubercles, yellow. Abdomen elongate-ovate, smooth and shining.

*Prosopis relegatus.*

Male.—Length 3½ lines. Black; head subopaque, very closely and finely punctured; the clypeus and inner orbits of the eyes, as high as opposite the insertion of the antennæ, yellowish-white; the mandibles with a longitudinal white stripe. Thorax: the disk closely and finely punctured; the metathorax with a triangular enclosed space at its base, which at its basal margin has a series of abbreviated striæ; a spot on each side of the collar, and the tubercles, yellow; wings subhyaline and iridescent, the nervures black; the first recurrent nervure uniting with the first transverso-medial nervure; the second recurrent received near the apex of the second submarginal cell; the calcaria pale testaceous. Abdomen oblong-ovate, shining; towards the base very finely punctured.

*Prosopis capitosus.*

Female.—Length 3 lines. Black, the head nearly quadrate above, slightly narrowed anteriorly towards the clypeus, closely and finely punctured; the flagellum, except the three basal joints, fulvous beneath; a small lunate yellow spot on each side of the face at the lower orbit of the eyes. Thorax ovate, very finely punctured; a minute spot on each side of the collar, and the tubercles, yellow; metathorax smooth and slightly shining; wings subhyaline, the nervures black; the first recurrent nervure uniting with the first transverso-medial nervure; the second recurrent received near the apex of the second submarginal cell; all the calcaria pale testaceous. Abdomen ovate, smooth and shining.

*Dasycolletes vestitus.*

Female.—Length 5½ lines. Head and thorax shining black, the abdomen dark blue. Head: below the antennæ covered with white pubescence, above is a little that is fuscous; on the cheeks and the head behind it is cinereous; ocelli in a curve on the vertex. Thorax: the mesothorax and scutellum with fine distant punctures; the pubescence on the sides of the thorax above fuscous, that beneath griseous; the femora fringed beneath with the same; the posterior coxæ with a white floccus; the pubescence on the posterior tibiæ black exteriorly, interiorly nearly white; on the basal joint of the posterior tarsi it is yellowish-white within; the calcariæ and claws of the tarsi pale

testaceous; wings hyaline, the nervures dark fuscous. Abdomen with fine shallow punctures, leaving the apical margins of the segments glabrous; at the apex a little black pubescence.

Male.—Length 4 lines. Very like the female; its general pubescence hoary; on the clypeus, cheeks and thorax beneath it is white; wings hyaline, with the nervures testaceous.

Taken at Wellington, North Island.

*Lamprocolletes fulvescens.*

Female.—Length $5\frac{1}{4}$ lines. Black; the front clothed with dense fulvous pubescence, palest on the clypeus; the cheeks have a pale fulvous pubescence; the ocelli in a curve on the vertex, which is shining. Thorax: the mesothorax shining and punctured, clothed with fulvous pubescence, which is sparing on the disk; palest on the sides, beneath, and on the legs; the apical joints of the tarsi rufo-testaceous; the posterior trochanters with a floccus of pale pubescence, that on the tibiæ dense and fulvous; the calcaria pale testaceous; wings hyaline and iridescent, the nervures pale rufo-testaceous. Abdomen ovate and shining; the apical margins of the segments narrowly testaceous and thinly fringed with fulvous pubescence; the apical segment with a bright fulvous fimbria.

*Halictus familiaris.*

Female.—Length $2\frac{3}{4}$ lines. Black; the head and thorax above very closely and delicately punctured, and slightly shining; the clypeus somewhat produced, shining, and with a few strong punctures; the tips of the mandibles rufo-testaceous; the flagellum rufo-piceous beneath. Thorax delicately punctured above; the metathorax truncate, with the margins rounded, at the base above finely rugose; wings hyaline, iridescent, with the stigma and nervures testaceous; legs with glittering, silvery-white pubescence; the calcaria pale testaceous. Abdomen oblong-ovate, shining, with the apical margins of the segments narrowly rufo-testaceous; beneath they are fringed with white hairs; the apical portion of the abdomen with a thin, short, white pubescence, which becomes dense at the sides of the anal rima.

## EXPLANATION OF PLATE IV.

1. *Mesostenus albopictus.*
2. *Priocnemis marginatus.*
3. „ *diligens.*
4. *Rhyssa antipodum.*
5. *Ichneumon perfidiosus.*
6. *Derecyrta deceptus.*
7. *Rhopalum carbonaria*, ♀.
8. *Fœnus unguicularis.*

X. *Descriptions of three new species of* Hymenoptera (Formicidæ) *from New Zealand.* By Frederick Smith.

[Read 6th September, 1876.]

Since the description of Mr. Wakefield's collection was in the press, three new and interesting species of *Formicidæ* have been sent to me by Mr. David Sharp; two belonging to genera not previously ascertained to inhabit New Zealand, namely, *Amblyopone* and *Ponera;* the type of the former genus is figured in Wiegm. Archiv. (1842), pl. vii. fig. 21, ♀. The type of the genus *Orectognathus* is figured in the Trans. Ent. Soc. Lond. (1852, 1853), pl. 21, fig. 9, ♀.

## Fam. PONERIDÆ.

### *Ponera castanea.*

Female.—Length 3½ lines. Chestnut-red, usually with the head and metathorax blackish; the mandibles and antennæ reddish, the margin of the former denticulate, and the tips of the joints of the latter fuscous or black; the head shining, very thinly punctured, and covered with a thin sericeous pile. Thorax oblong-ovate and very finely punctured, shining and finely pubescent; legs red, the calcaria pale testaceous. Abdomen smooth and shining, the apex rufo-testaceous, having a thin sericeous pile and a mixture of longer scattered pubescence; the node of the abdomen wedge-shaped, compressed above, with its upper margin rounded.

Worker.—Rather smaller than the female and of a brighter red, but closely resembling that sex; thorax elongate, attenuated at the base of the metathorax, which is as long as the pro- and meso-thorax, entirely smooth and shining; the node of the abdomen as in the female, the claws of the tarsi simple in both sexes.

Collected by Captain Brown at Tairua, near Mercury Bay, North Island.

*Amblyopone cephalotes.*

Worker.—Length 4 lines. Black, with obscure rufo-piceous tints; the mandibles, antennæ and legs ferruginous. Head more than twice the width of the prothorax, subquadrate with the posterior angles rounded, the anterior margin narrowly obscurely rufo-piceous, a deep central channel anteriorly, extending from the insertion of the antennæ to the middle of the head; longitudinally striated, excepting the central and posterior areas, which are somewhat distantly punctured. Thorax elongate, shining, strangulated in the middle; the prothorax subglobose and distantly punctured; the mesothorax abbreviated; the metathorax elongate, narrower than the prothorax, the sides nearly parallel, obliquely truncate posteriorly; shining and distantly punctured. Abdomen smooth and shining; the first segment or node subglobose; the two following large, the second largest, both very convex and rounded; the apex of the abdomen rufo-piceous.

This species is very distinct from *Amblyopone australis*, the type of the genus, described by Erichson in Wiegm. Archiv. 1842; it is most closely allied to *A. obscura*, Smith, Cat. Form. 109. Erichson gives the number of the joints of the antennæ in this genus as 11-articulate; in the figure given of the type, they are represented 12-articulate, and this is the true number both in the female and worker, the male having, as usual, an additional joint.

Collected by Mr. Lawson at Auckland.

The genus *Orectognathus* was established by myself in the year 1854, in the "Transactions of the Entomological Society," vol. ii., New Series, 1852—1854, on a species of which only a few workers had been obtained in New Zealand; a second species has been found at Tairua by Captain Brown: an examination of the latter renders it necessary to give the generic characters with some important additions.

There are four genera of ants, all bearing a general facial resemblance; these are, *Daceton*, Perty; *Ceratobasis*, Smith, and *Strumigenys*, Smith, all from Brazil; the genus *Orectognathus*, of New Zealand, being the fourth. Winged females of the two first genera are known; and although the neuration of the anterior wing

is similar in some degree, yet, as in *Cerotobasis*, all the discoidal cells are wanting, and the structure of the antennæ so very different, their distinction is definite. *Strumigenys* is separated from the foregoing by having only six joints in the antennæ of the female and worker; the winged female not known. *Orectognathus* has 5-jointed antennæ, the male is not known; the female has not been taken in a winged state.

### Genus Orectognathus, Smith.

Head heart-shaped, deeply emarginate behind; mandibles porrect, bifurcate at their apex, near to which is a sharp tooth or spine; eyes lateral, of moderate size, and composed of a number of circular, convex, separated facets; antennæ inserted forwards on the head, being 5-jointed in the workers and females. Thorax oblong, much narrower than the head, widest anteriorly, and with a short, acute tooth at the margins of the prothorax; the mesothorax has also a small lateral tooth; the metathorax with two acute spines; legs simple. Abdomen ovate and binodose; the first node petiolated and clavate, the second globose.

#### *Orectognathus perplexus.*

Female.—Length 1¼ line. Pale ferruginous, the head closely and finely punctured; antennæ and mandibles paler than the head. Thorax shorter and narrower than the head; the prothorax rounded in front; the scutellum with the hinder margin rounded, somewhat projecting over the metathorax, which is armed with two compressed, acute spines; the entire thorax closely and finely punctured; the legs paler than the thorax; the anterior tibiæ with a spine at their apex, the intermediate and posterior pair simple. Abdomen slightly ovate, nearly globose; the first node petiolated and rounded, the second semi-globose, forming apparently the base of the abdomen.

Worker.—The same size as the female, differing principally in the form of the thorax, the anterior margin of the prothorax being rounded; the sides oblique, the upper surface being kite-shaped and posteriorly truncate, the angles of the truncation being armed with a spine; closely and finely punctured above; the legs and abdomen as in the female.

Collected at Tairua, near Mercury Bay, by Captain Brown.

In this species, the relative proportions of the joints of the antennæ differ from those of the type of the genus *O. antennatus*, in which the second joint of the flagellum is longer than the two apical joints, but in the present species the three basal joints are nearly of equal length, and the three united only a little longer than the apical joint; the general facies of the insect and the number of joints are the same.

## XI. *Descriptions of some new exotic species of Coleopterous Insects.* By J. O. Westwood, M.A., F.L.S., &c., Pres. Ent. Soc.

[Read 7th June, 1876.]

Amongst the recent additions to the Hopeian Museum at Oxford the private collections of various families of Coleopterous insects, made by Mr. Wallace in the Malayan Archipelago, are especially to be noticed, including the different groups of Malacoderm beetles. Amongst these insects were found several of considerable interest, some of which it is the object of this paper to describe.

### Family CLERIDÆ.

#### Genus nov. Anisophyllus.

Corpus elongatum, depressum, obscurum, setosum.

Caput mediocre. Labrum subbilobatum, setigerum. Mandibulæ elongatæ, falciformes, intus dente medio acuto armatæ. Maxillæ bilobatæ, lobis elongatis, truncatis, setosis. Palpi maxillares subfiliformes, articulo ultimo subcylindrico, apice oblique truncato. Labium apice dilatatum, angulis anticis rotundatis, palpis labialibus elongatis, subfiliformibus, setis longis instructis. Antennæ longitudini elytrorum æquales, articulis 3tio—8vo antice in denticulum sensim elongatum productis; articulo 9no ramum longum planum e basi emittente, articulis 10mo et 11mo planis, latis, elongatis, 10mo apice in angulum porrecto, 11mo simplici. Prothorax subquadratus, parum depressus, postice parum latior. Elytra elongata, subdepressa, prothorace parum latiora, apice rotundata. Pedes mediocres, tarsis articulo basali brevi, subtus in lobum elongatum producto, articulis 2do et 3tio longioribus, subtus in lobum productis, 4to brevi; 5to longiore; ungues tarsorum basi intus dilatati.

This genus is allied to *Enoplium*, but differs from it, and indeed from all known *Coleoptera*, in the elongated branch of the 9th joint of the antennæ, whilst the 10th joint is not furnished with a similar branch, but is simply

produced at its apex into an obtuse angle, being, as is also the terminal joint, elongated, flattened and dilated. The species are obscure, and have very little of the appearance of the family to which they belong.

Species 1. *Anisophyllus obscurus*. (Pl. II. fig. 1.)

Picco-niger, capite et pronoto vix nitidis; elytris opacis, crebre punctatissimis, breviter setosis, basi parum subrufescentibus; pedibus nigris, femoribus lutescentibus, apice nigris.

Long. corp. lin. 3½.

Habitat Mysol ins. Malay. (Wallace.)

In Mus. Hopeiano Oxoniæ.

*Obs.*—Individuum alterum, ex New Guinea allatum, est parum majus et pallidius, elytris basi rufescentibus, antennisque luteo-fuscis.

## Family TELEPHORIDÆ.

### Genus nov. Astychina.

Corpus parvum, depressum, nitidum, subcoriaceum.

Caput transversum, subconvexum. Labrum minutum, membranaceum, semi-rotundatum, medio antice emarginatum. Mandibulæ graciles, acutissimæ, falciformes. Maxillæ bilobatæ. Palpi maxillares filiformes. Labium subovale, minutum, membranaceum. Palpi labiales modice elongati, articulo ultimo basin versus incrassato, apice attenuato. Antennæ elytris breviores, articulo 3tio præcedenti fere triplo longiori, articulis 4to—9um sensim paullo crassioribus, articulo 10mo difformi, extus rotundato, intus in lobum parvum reflexum ante apicem producto (in uno sexu ♀? incrassato et sulcato); articulo ultimo maximo, supra producto, infra in spinam acutam elongatam (articulum præcedentem superantem) terminato (in uno sexu ♀? incrassato, elongato, haud spinam gerente). Prothorax transversus, lateribus rotundatis. Elytra elongata, parallela, subdepressa. Pedes graciles, tarsis articulo 4to subtus bilobato, unguibus tarsorum basi dilatatis.

This genus is allied to *Podabrus*, but the antennæ exhibit a very anomalous structure, the two terminal joints in one sex forming what appears to be a remarkable prehensile apparatus, different from anything which I have elsewhere noticed in the insect world, but of which some analogous forms occur in some of the Entomostracous Crustacea.

Species 1. *Astychina flavicollis.* (Pl. II. fig. 2.)

Niger, nitidus, prothorace flavo, marginato; elytris coriaceis, mandibulis flavis, pedibus nigris, tibiis dimidio basali flavescentibus, antennarum articulo ultimo in medio tumido.

Long. corp. lin. 3.

Habitat in Insulâ Malayanâ Dorei dicta. (Wallace.)

In Mus. Hopeiano Oxoniæ.

Species 2. *Astychina mœrens.*

Totus niger, nitidus; ore pallido, tibiis lutescenti-fumosis; articulo ultimo antennarum in medio vix inflato, spinâ elongatâ infra (aut antice) armato.

Long. corp. vix lin. 2.

Habitat Nov. Guinea. (Wallace.)

In Mus. Hopeiano Oxoniæ.

Species 3. *Astychina funebris.*

*A. mœrenti* similis, tibiis fuliginosis, elytris subpiceis; antennarum articulo 10mo et 11mo arcte conjunctis (illo 9no duplo majori), ultimo magno obovali, apice acuminato, intus inermi. (An fœmina?)

Long. corp. lin. 2.

Habitat Dorei. (Wallace.)

In Mus. Hopeiano Oxoniæ.

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DESCRIPTION OF PLATE II.

Fig. 1. *Anisophyllus obscurus;* 1*a*, labrum; 1*b*, mandible; 1*c*, maxilla; 1*d*, labium and palpi; 1*e*, posterior tarsus; 1*f*, one of the ungues.

Fig. 2. *Astychina flavicollis;* 2*a*, labrum; 2*b*, mandible; 2*c*, maxilla; 2*d*, extremity of maxillary palpus; 2*e*, labium and palpi; 2*f*, antenna; 2*g*, point of the last joint of antenna, seen sideways; 2*h*, posterior tarsus; 2*i*, ungues.

Fig. 3. Antenna of *Astychina mœrens.*

Fig. 4. Antenna of *Astychina funebris.*

## XII. *Notæ Dipterologicæ. No.* 1.—Bombylii *at Pompeii.*

By J. O. Westwood, M.A., Hon. M. Ent. Soc. France, &c., Pres. Ent. Soc.

[Read 1st March, 1876.]

The youngest Entomologist cannot but have observed with pleasure, in the spring months, the interesting flight and movements of the two-winged flies belonging to the genus *Bombylius*. In the hottest sunshine some of these flies are to be seen suspended, as it were, in the air, immoveably, the movements of the wings being so rapid as to render them invisible; but at once distinguishable by their long and slender black proboscis, stretched out in front of the head, and equalling in length the entire body of the insect. Other individuals may be seen flying over hot sandy banks, searching about the entrance of every hole and crevice. Each of these particular movements has a very distinct object, the former insects being the males, which do nothing but revel in the sun-beams, whilst the latter are the females, seeking for the nest of some luckless bee, already furnished with a supply of food for the larva of the bee, when hatched from the egg already deposited by the hard-working female bee in her cell.

Thanks to the researches of previous observers, the economy and transformations of the *Bombylii* are now satisfactorily known to Entomologists. Latreille rightly considered that the *Bombylii*, like *Anthrax*, were parasites, contrary to the opinion of Zetterstedt that the larvæ feed on the roots of plants (Ins. Lapp. p. 510). The pupa of *Bomb. major* was first figured by M. Imhoff in the Isis for 1834, having been found by him in a situation which he had previously noticed to be frequented by *Andrena humilis* (vol. 1834, p. 536, pl. xii). In my Introduction (vol. 2, p. 538, 1840), I published a figure of the same pupa from a specimen discovered by Mr. C. Pickering in a sandy gravel pit at Coombe Wood on the 28th of March, from which the imago was produced in a few days. The pupa is very similar to those of the species of *Anthrax*, which are known to be parasites, having the front and underside of the head armed with strong spines, and the

dorsal segments of the abdomen furnished with transverse rows of strong reflexed hooklets. In 1852, M. H. Lucas published the description of a new Algerine species of the genus, *Bomb. Boghariensis* in the Annales of the French Entomological Society, 2nd ser. vol. x. p. 11, pl. 1, No. 11., which he had reared from a pupa found under a stone in a damp sandy situation, and, contrary to the opinion of Latreille, he expressed himself thus: "je suis porté à croire que les larves qui composent ce genre ne sont pas parasites, comme le supposent Latreille et beaucoup d'autres Entomologistes, mais qu'elles vivent au contraire isolément dans la terre,—opinion, au reste, qui avait déjà été émise, mais avec doute, par M. Macquart, et que mon observation vient confirmer."

In 1858 the real history of the *Bombylius* was discovered by the veteran Léon Dufour, who in the spring found various exuviæ of the pupa of *B. major* sticking out of the ground, together with the newly-hatched insect, in places much frequented by various *Andrenidæ*, especially *Colletes hirta*, and who succeeded in the autumn, by digging on the spot, to find the larva "au milieu des déblais, où gisaient par-ci par-là des coques de Colletes." (Ann. Soc. Ent. France, 3rd ser. tom. vi. p. 505, pl. 13, fig. 111, and details.) The larva is elongated, apod and fleshy, and of a white colour. The preceding observations clearly prove that the larvæ of the *Bombylii* are parasites in the nests of other insects, in the manner of the cuckoo among birds; and the observation which has been the cause of my troubling the Society with this communication, although confirmatory of the discovery of M. L. Dufour, is more interesting from the situation in which it was made than from any additional knowledge which it affords.

Those persons who have had the great pleasure of visiting Pompeii are aware that the whole area of the inclosure, streets, temples, houses and Forum of that most remarkable city, are throughout paved with stones of various sizes, from the large blocks which form the stepping-stones across the streets, to the minute cubes with which the tessellated pavements of most of the houses are ornamented in so beautiful a manner; the only exception being the Forum Triangulare, adjoining the Theatre, at the south-east angle of the city. In this Forum the surface is unpaved; and on visiting it on several occasions, in brilliant sunny weather in the month of April, I was at once struck with a loud buzzing noise, just like that made by a swarm of bees.

On looking about to see what was the cause of this noise, I immediately perceived that the whole area was swarming with great numbers of *Bombylius medius*, which were flying about all over the surface (not hovering in the air), carefully examining every crevice and hole. With them were an equal number of a large species of *Andrena* (of which I was not able to capture a specimen), engaged in making the burrows for their nests; and it was evident that the *Bombylii* were engaged in finding out the already-provisioned nests in which to deposit their eggs. Fortunately I also discovered (sticking nearly out of the ground) the exuvia of a pupa of the *Bombylius*, just in the same manner as the cast pupa skin of a *Cossus* or *Zeuzera* is seen sticking out of the trunks of trees, or still more closely as the pupa of a *Hepialus* or *Tipula*, which are often found partially exserted above the surface of the ground, the pupa of the *Bombylius* being thus shown to have the instinct to force its way to the surface of the ground before assuming the imago state, by the help of the numerous spines with which the segments of the body are dorsally armed, and which, being directed backwards, allow the insect to work upwards and prevent it, in its advancing progress, from slipping backwards.

## XIII. *Notæ Dipterologicæ. No.* 2.—*Descriptions of some new exotic species of* Tipulidæ. By J. O. Westwood, M.A., &c., Pres. Ent. Soc.

[Read 1st March, 1876.]

The family *Tipulidæ* in its widest extent comprises species which exhibit a wonderful series of modifications in the structure of the antennæ, and especially in the arrangement of the wing-veins. Many years ago I described some interesting forms, allied to the more typical *Tipulæ*, in the Philosophical Magazine* and in the Zoological Journal;† and on the present occasion I have described and figured some curious species of the same division with which our collections have more recently been enriched, including some of the most gigantic Dipterous insects hitherto recorded, the wings of one of the species measuring not less than four inches in expanse, and others more than three inches, whilst the legs of some of the species are disproportionately elongated.

Genus nov. Semnotes.

Corpus crassum, pro familiâ valde abbreviatum, thorace antice valde convexo, capite minuto, declivi, supra fere inconspicuo. Oculi prominentes laterales, naso declivi, supra arcuato, apice acuto. Trophi abbreviati, palpis brevibus setosis, articulo basali? minuto, 2ndo mediocri, apice crassiori, 3tio paullo longiori ante medium parum constricto, 4to longitudine 2di, ultimo fere duplo longiori, apice incrassato. Antennæ minutæ, capite multo breviores, articulo 1mo brevissimo crasso, 2ndo omnium maximo, 3tio brevi subcyathiformi, 4to subovali, 5to (ex articulis duobus arcte coalitis composito?) minuto conico, tribus reliquis gracillimis, setis longis parum sparsis, ultimo in medio crassiori.

Alæ cellulâ anticâ discoidali elongatâ, venas 4 ad apicem emittenti; cellulâ posticâ elongatâ duas emittenti, cellulâ subapicali venas tres emittenti, quarum antica bifurcata.

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* Lond. and Edinb. Phil. Mag., April, 1835, p. 501.
† Zool. Journal, vol. 5, p. 447. 1835.

Pedes graciles longissimi, tarsis gracillimis; posticis tibiis plus duplo longioribus; articulo apicali minimo.

Abdomen crassum, clavatum, segmentis intermediis subito dilatatis; segmento ultimo ventrali apice sinuato, in medio profunde inciso.

*Semnotes imperatoria.* (Pl. III. fig. 1.)

Pallide stramineo-flava, nigro-variegata, capite cum collo fulvo; oculis antennisque nigris, thorace supra antice nigro, fasciâ transversâ sinuatâ ante alas, maculis duabus lateralibus pone medium, nigris, subtus cum lateribus nigro, maculâ oblongo-ovatâ albâ subtus basin alarum; abdominis segmentis quinque basalibus supra in medio nigris, intermediis nigro-marginatis; ventre plano, pallide albido, apice fulvo maculâ magnâ rotundâ basali, segmentis intermediis in medio et lateribus nigris; alis cinereo-fuscis, basi nigris, venis obscurius marginatis, pedibus nigris; femoribus basi flavis, tibiis flavis, apice nigris.

Long. corp. lin. 13; expans. alar. ant. lin. 38.

Habitat in Australiâ (Melbourne).

In Mus. Britann. et Hopeiano Oxoniæ.

This gigantic Tipulidan differs from the following in its unspotted wings and in its comparatively shorter legs, the anterior tibiæ being 9 lines long and the anterior tarsi 14 lines long; the other legs are but very slightly longer than the anterior in the Hopeian specimen.

*Semnotes ducalis.*

Fulva, nigro-variegata, capite cum antennis fulvo; thorace fulvo antice maculâ mediâ hastatâ, alterisque duabus rotundis humeralibus binisque alteris lateralibus prope alas nigris; abdomine fulvo, segmento basali maculâ discoidali, secundo maculâ in medio marginis postici, segmento 3tio maculâ mediâ lateribusque nigris, 4to fasciâ nigrâ; segmentis mediis magis nigricantibus, posticis fulvis; thorace infra et lateribus sub alas nigris; femoribus nigris, basi fulvis; tibiis fulvis, apice nigris; tarsis nigris; alis dimidio antico fulvo, postico cum apice cinereo-fusco; basi nigra, maculâ ante medium subcostali, fasciâque pone medium obscure cinereo-fuscis; halteribus fulvis, apice nigris.

Long. corp. lin. $10\frac{1}{2}$; expans. alar. unc. $2\frac{1}{3}$; long. ped. postic. unc. 2, lin. 7.

Habitat in Australiâ boreali. (Damell.)

In Mus. Hopeiano Oxoniæ.

This species is smaller than the preceding, and the variegated wings render it much more conspicuous. In the anterior legs the tibiæ are 6 lines and the tarsi are 10 lines long. In the hind legs the tibiæ are 9 lines and the tarsi 16 lines long, of which the basal joint occupies $11\frac{1}{2}$ lines.

## Genus Ozodicera.

### *Ozodicera longipedalis.* (Pl. III. fig. 4.)

Elongata, gracilis; naso elongato; castaneo-fusca, thorace antice vittâ mediâ angustâ alterisque duabus lateralibus nigris; antennis gracilibus, 15-articulatis, articulis 4to ad 9um ramos duos breves singulatim emittentibus; 10mo ad ultimum simplicibus; alis hyalinis, venis duabus discoidalibus elongatis, fusco-nebulosis (fuscedine in medio anterioris interruptâ) strigisque duabus valde obliquis inter medium et apicem alarum obscure fuscis, cellulâ parvâ subapicali venas 4 simplices emittenti; pedibus longissimis; tarsis posticis tibiis plus duplo longioribus.

Long. corp. unc. $1\frac{1}{6}$; expans. alar. unc. 2; long. cox. et fem. postic. lin. 10; tibiæ post. lin. 11; tars. post. lin. $25\frac{1}{2}$ = unc. 3, lin. $10\frac{1}{2}$.

Habitat in Australiâ.

In Mus. Britann.

The outer dark brown apical fascia extends from the tip of the wing across the terminal veins and the apical margins of the small subapical and posterior discoidal cell, uniting with the dark-clouded posterior longitudinal discoidal vein, which is clouded with brown throughout its whole length to the posterior margin of the wing.

I have referred this insect to the genus *Ozodicera*, Mcq. (= *Hemicteina*, Westw. Zool. Journ. vol. v. p. 450), on account of the similar arrangement of the wing veins, and the slightly ramose structure of the 3rd and five following joints of the antennæ. In the species here described, however, each of these joints emits two short slender branches, and the filiform terminal part of the antennæ consists of six joints (fifteen in all), whereas in the Brazilian type of the genus (*Oz. gracilis*, Westw., l. c.) there are only single branchlets emitted from the intermediate joints, and the terminal portion only consists of four joints (or thirteen in all).

Genus Tipula.

*Tipula Brobdignagia.* (Pl. III. fig. 3.)

Obscure luteo-fulva, ore nigro, naso elongato, apice acuto; antennis gracilibus 12-articulatis, articulo basali crassiore, 2do minuto, 3tio et reliquis sensim decrescentibus; thorace antice vittâ mediâ latâ (lineam pallidam centralem includente) maculisque duabus lateralibus nigris, dorso postice in medio vittâ latâ albidâ (e maculis tribus formatâ) notato; alis pallide fuscis, venâ mediâ longitudinali obscuriori, cellulâ parvâ subapicali venas tres extus emittenti, quarum antica bifurcata; pedibus valde elongatis, femoribus et tibiis extremo apice nigris, tarsis præsertim intermediis tibiis longioribus, unguibus minutis elongatis, basi infra dilatatâ et in medio ungue minuto armato.

Long. corp. unc. $1\frac{2}{3}$; expans. alar. unc. 4; long. ped. interm. unc. 3, lin. 11.

Habitat in Chinâ boreali.

In Mus. Britann.

*Tipula Mikado.*

Obscure fulvo-brunnea, thoracis dorso obscuro; alis pallide fuscis venâ mediâ discoidali longitudinali et basali obliquâ crassioribus, punctoque prope basin obscurioribus fasciâ obliquâ dilutiori fere indistinctâ, inter medium et apicem, pedibus obscure fulvis, femoribus apice nigris. (Mas.)

Long. corp. lin. 15; expans. alar. lin. 38.

Habitat in Japoniâ. (D. Fortune.)

In Mus. Hopeiano Oxoniæ.

Caput luteum lineâ tenui mediâ longitudinali brunneâ, naso elongato. Palpi nigri, articulo ultimo longo, gracili, filiformi. Antennæ fulvo-luteæ, longitudine nasi, 12-articulatæ. Corpus infra cum pedibus et halteribus obscure luteo-fulvum. Thorax supra nigricans, lineis duabus dorsalibus et incisuris ferrugineis. Abdomen segmentis apicalibus supra obscurioribus, ano pallido.

Genus Limnobia.

*Limnobia Satsuma.*

Capite et thorace supra fusco-griseis, hujus dorso magis rufescenti, abdomine elongato (thorace plus triplo longiori), depresso, fulvo; alis luteo-fulvis, pallide-fusco variegatis; pedibus crassioribus, fulvis; femoribus apice, tibiis, basi

extremâ et apice nigris, capitis naso abbreviato; antennis perbrevibus, 16-articulatis, articulo basali naso paullo longiori, reliquis articulis sensim attenuatis et longe setosis. (Mas.)

Long. corp. lin. 12 (unc. 1); expans. alar. unc. 1½.

Habitat in Japoniâ.

In Mus. Hopeiano Oxoniæ.

The head and thorax are clothed with a fine sericeous coating, giving them a greyish colour. The wings are fulvous, the anterior margin being rather more deeply coloured. The veins are dark fulvous, having a moderate-sized brownish patch towards the base, followed by a small, nearly central spot, and an irregular and much broken bar between the middle and apex of the wings. The legs are comparatively thick, and covered with fine, short hairs. The halteres are luteous buff.

## Genus nov. Libnotes.

Corpus gracile. Caput minutum, globosum, oculis fere totum capitis occupantibus, supra et infra coalitis; nasus mediocris; palpi breves, 4?-articulati. Antennæ breves, graciles, 14-articulatæ, articulo 1mo longiori, 2ndo brevissimo, reliquis sensim attenuatis, singulo setam longam supra emittenti. Thorax compressus. Abdomen breve, depressum, thorace duplo longius. Alæ elongatæ, angustæ, venis in parte apicali alarum simplicibus (nec furcatis), parallelis; venis analibus gracillimis versus basin curvatis, venâ cubitali unicâ integrâ, venis tribus externo-medianis e cellulâ oblongâ ordinariâ exeuntibus.

*Obs.*—The venation of the wings in this genus is quite unlike that of any other Tipulideous insect with which I am acquainted. Its peculiarities will be best understood by a reference to the figure of the wing (fig. 6*b*). It is not easy to speculate on the near affinities of so anomalous an insect.

### *Libnotes Thwaitesiana.*

Capite nigro, antennis et palpis fuscis; thorace et abdomine læte testaceo-fulvis; alis limpidis, costâ tenui venisque nigricantibus; pedibus luteis, femoribus anticis (nisi ad basin) nigris, apice femorum aliorum obscuris. (Mas.)

Long. corp. lin. 6; expans. alar. lin. 18.

Habitat Ceylon; meum amicissime communicavit D. Thwaites.

In Mus. Hopeiano Oxoniæ.

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DESCRIPTION OF PLATE III.

Fig. 1. *Semnotes imperatoria*, nat. size; fig. 1*a*, antenna.
Fig. 2*a*. *Semnotes ducalis*, head seen sideways; 2*b*, wing.
Fig. 3. *Tipula Brobdignagia*, nat. size.
Fig. 4. *Ozodicera longipedalis;* 4*a*, antenna; 4*b*, extremity of wing.
Fig. 5*a*. *Limnobia Satsuma*, antenna; 5*b*, wing.
Fig. 6*a*. *Libnotes Thwaitesiana*, head and antenna; 6*b*, wing.

## XIV. *Notæ Dipterologicæ. No.* 3.—*Descriptions of new genera and species of the family* Acroceridæ. By J. O. Westwood, M.A., F.L.S., &c., Pres. Ent. Soc.

[Read 6th September, 1876.]

The family *Acroceridæ* is remarkable for the singular inflated bodies of many of the species, whence the sectional name of *Vesiculosa* has been given to the group. The various structural modifications exhibited by the different genera are of great interest; thus the antennæ are very distinct and porrected in many species, whilst they are so small as to be scarcely visible in others. The proboscis in some is considerably longer than the entire body, whilst in others it appears to be absolutely wanting. The veining of the wings is also most singularly modified; the veins in some species being almost obsolete and scarcely discernible,* whilst the singular hunchbacked form of some of the groups, especially *Philopota* and *Megalybus*, is quite unique.

The species were collected into a monograph by the lamented Dr. Erichson, published in his "Entomographien" in 1840, which I supplemented by descriptions of nineteen additional species in the 5th volume of our "Transactions," since which time various isolated additions have been made to the group.

The following is a list of the new genera and species described in this paper:—

Panops Lamarckianus.
Lasia ænea.
„ æneiventris.
„ nigripes.
„ bicolor.
Apsona muscaria.
Leucopsina Odyneroides.
Megalybus pictus.
„ tristis.
„ gracilis.
„ subcylindricus.
Pterodontia dimidiata.
Pialea? lutescens.
Pialeoidea magna.
Nothra bicolor.
Astomella apiformis.
„ bombiformis.
Ogcodes Darwinii.
„ Fortnumi.
„ Tasmannica.
„ ignava.
Leptynoma sericea.

* The comparative study of the veins of the wings in this family is productive of striking results with reference to the system of venation throughout the order *Diptera*. This subject will probably form one of my series of *Notæ Dipterologicæ*.

Genus Panops, Lamarck, Latr.

*Panops Lamarckianus.* (Pl. V. fig. 1 and details.)

Nigro-subcyaneus, thorace antice cum lateribus dense luteo-pubescentibus; antennis totis nigris, capite duplo longioribus, articulo ultimo longo, tenui, filiformi, apice subacuminato; abdominis lateribus cum ventre obscure sanguineis; pedibus luteis, femoribus nisi apice tibiisque lineâ externâ nigris; ocellis parum distinctis, in tuberculum vix elevatum positis; thoracis dorso convexo integro, squamulis concoloribus; abdominis segmentis continuis, fere nudis; alis fuscis, cellulâ minimâ quadratâ ad apicem cellulæ medianæ angustæ; squamulis obscure albis.

Long. corp. lin. 5½; expans. alar. lin. 11.

Habitat Moreton Bay, Australia. In Mus. Hopeiano Oxoniæ.

This species differs from *P. flavipes* (Latr. Enc. Méth. viii. p. 710) in its slender filiform antennæ, its convex thorax destitute of longitudinal impressions, and its general colour. Like that species it has a minute supplemental cell on the disc of the wings at the end of the long, central, narrow, discoidal cell; but in the unique specimen in the Hopeian collection the cell is of unequal size in the two wings. Fig. 1*d* represents the wing on the right side of the body, and fig. 1*e* the veins of the characteristic part of the wing on the left side. The length of the wings equals that of the head, thorax and half the abdomen, and the proboscis reaches to the middle of the abdomen.

Genus Lasia, Wiedemann, Erichson.

*Panops*, Macquart, Wiedemann (olim), Guérin, Blanchard.

The species of this genus are distinguished from those of *Panops*, (with which they are united by the French authors) by their geographical range (being confined to South America), their metallic colours, and the position of their antennæ.

The species hitherto described are—

1. *L. flavitarsis*, Wied., Macquart, Erichson. (*amethystina*, Perty, pl. 36, fig. 7; *Beris? violaceus*, G. R. Gray, in Griffith, An. Kingd. Ins. p. 114, pl. 114, fig. 2.)

Habitat in Brasiliâ.

2. *L. corvina*, Erichs. Ent. p. 143. (Nigra, nitida, thorace nigro-hirta; alis hyalinis, costâ nigrâ.)

Habitat Chili.

3. *L. ocelligera*, Wied., Macquart, II. n. Dipt. pl. 9, fig. 1; Guérin, Icon. R. An. Ins. pl. 94, fig. 9; Blanchard, in Gay's Chili, vol. vii. p. 376?
Habitat in Brasiliâ; Chili?

4. *L. splendens*, Wied. Auss. Zw. Ins. vol. i. t. 4, fig. 3.
Habitat in Brasiliâ.

5. *L. nigritarsis*, Blanchard, in Gay's Chili, vol. vii. p. 375; Dipt. pl. 3, fig. 4. (*Ponops n.* Cyaneo-virescens, micans, capite antennisque nigris, thorace dense albido-sericeo, pedibus totis nigris.)
Long. corp. 5—6 lin.
Habitat in Chili; Coquimbo.

6. *L. rufovestitus*, Blanchard, op. cit. p. 375, pl. 3, fig. 5. (*Ponops r.* Violaceus, nitidus, capite antennisque nigris, thorace dense rufo vestito, pedibus totis nigro-violaceis, abdomine violaceo parcissime piloso.)
Long. corp. lin. 5—6.
Habitat in Chili; Coquimbo.

To the above I am able to add the following—

7. *L. œnea.* Tota supra ænea, pubescentiâ densâ albido-fulvâ vestitâ, cupreo vel aureo plus minusve nitens; antennis totis nigris, epistomate nitido-cyaneo; abdomine infra splendide violaceo; pedibus fulvis, proboscide nigrâ; alis hyalinis, venis luteo-fuscis.
Long. corp. lin. $5\frac{1}{2}$; expans. alar. lin. $10\frac{1}{2}$.
Habitat in Chili. In Mus. Hopeiano Oxoniæ.

8. *L. œneiventris.* Præcedenti simillima at vix varietas ejus, minor, nigro-ænea, luteo-pubescens; antennis nigris, pedibus parum obscurioribus, ventre nigro-æneo.
Long. corp. lin. 4.
Habitat in Chili. In Mus. Hopeiano Oxoniæ.

9. *L. nigripes.* Viridi-ænea, capite nigro; thorace et abdomine densissime testaceo-setosis, antennis totis nigris; proboscide et pedibus piceis, femoribus nigris; ventre nigro-cyaneo.
Long. corp. lin, $3\frac{1}{2}$; expans. alar. lin. $5\frac{1}{2}$.
Habitat in Chili. In Mus. Hopeiano Oxoniæ.

10. *L. bicolor.* Capite æneo, thorace aureo-viridi, luteo parum pubescenti, abdomine supra et infra lætissime violaceo; antennis minoribus totis nigris, pedibus piceis; proboscide vix apicem abdominis attingente.
Long. corp. lin. 3; expans. alar. lin. 6.
Habitat in Chili. In Mus. Hopeiano Oxoniæ.

Genus Apsona.

Genus novum *Panopi* et *Lasiæ* affine, differt antennis apice longe aristatis; proboscide longitudine mediocri, cellulis duabus posticis basi e venulâ unicâ basali pedicellatis.

Caput rotundo-transversum; oculis maximis antice conjunctis, setosis. Ocelli 3 in tuberculum parvum positi, verticales. Antennæ in medio faciei insertæ, articulis duobus basalibus parvis, ultimo basi elongato-ovato, apice in setam longam tenuem producto. Proboscis elongata, thoracis longitudine, apice bilabiato. Alæ venis fere ut in *Lasiâ* et *Panope* dispositis, cellulâ autem curvatâ apicali e venulâ tertiâ postcostali pone cellulam angustam mediam discoidalem emissâ; cellulâque triangulari etiam basi pedicellatâ. Pedes graciles; abdomen fere globosum. Color metallicus.

Species unica *Apsona muscaria.*

(Pl. V. fig. 2 and details.)

Valde convexa, nitida, sublente tenuissime coriacea, cupreo-viridis, luteo-pubescens, proboscide et antennis nigris, pedibus luteo-flavis, femoribus in medio obscurioribus; alis hyalinis, venis nigris.

Long. corp. lin. 4; probosc. lin. 2; expans. alar. lin. 8½.

Habitat in Novâ Zelandiâ. In Mus. Hopeiano Oxoniæ.

Genus Leucopsina.

Genus novum *Panopi* affine at structurâ abdominis humerisque thoracis prominentibus diversum.

Caput transversum; oculi maximi; antice sub antennarum basin conjuncti. Ocelli 3 verticales, ad junctionem superam oculorum positi. Antennæ frontales porrectæ; articulis 3, ultimo elongato subclavato. Proboscis longitudine mediocris, ad apicem thoracis infra extensa. Thorax ovatus, convexus, angulis anticis gibbose lobatis. Abdomen elongatum, segmento 1mo in pedunculum angustato, segmentis reliquis massam ovatam efficientibus. Pedes graciles; alæ mediocres, venis fere ut in *Panope* dispositis, cellulâ apicali ad basin ejus antice appendiculo minuto instructâ.

*Leucopsina Odyneroides.* (Pl. V. fig. 3 and details.)

Nigra, flavo-variegata, capite nigro, antennarum articulis duobus basalibus flavis; thoracis angulis humeralibus

gibbosis, dorsoque utrinque lineâ tenui curvatâ inter alas flavis; pedunculo abdominis fasciâ basali maculisque duabus lateralibus apicalibus, margineque postico segmenti 2di flavis; pedibus fulvis, femoribus in medio nigricantibus; alis dimidio basali cum dimidio costæ fuscis, reliquis hyalinis.

Long. corp. lin. $5\frac{1}{2}$; expans. alar. lin. 10.

Habitat in Novâ Hollandiâ. In Mus. Britann.

## Genus Megalybus.

Genus novum *Philopotæ* proximum, prothorace subquadrato, thoracis dorso magis gibboso; abdominis segmentis constrictis.

Caput subglobosum, postice truncatum, oculi maximi, capitis partem superam et anticam fere tegentes, supra et sub insertionem antennarum connexi. Ocelli 2 verticales. Antennæ minutæ, articulis 2, secundo subpyriformi, setâ gracillimâ terminato. Proboscis elongata. Prothorax transverso-quadratus, valde declivis, subhorizontalis. Thoracis dorsum valde gibbosum, scutellum gibbosum. Alæ mediocres, cellulâ apicali elongatâ; cellulâ trigonâ posticâ haud completâ; venis integris ad marginem posticum alæ extensis. Pedes graciles.

The names here employed for this genus and its four species were found attached to the specimens in manuscript when purchased, and have been retained, although, I believe, they have never been published. The latter species, by their remarkably gibbose thorax, approach the genus *Systropus*, which, after all, may possibly be a most aberrant form of *Acroceridæ*.

### *Megalybus pictus.* (Pl. V. fig. 4 and details.)

Piceus, thorace castaneo-fulvo, nigro albidoque variegato, vittâ mediâ anticâ nigrâ albido-marginatâ; alis hyalinis nubilâ mediâ alterâque curvatâ subapicali fuscis, proboscide et pedibus luteo-albidis, femoribus in medio obscurioribus, abdomine piceo margineque postico segmentorum (in medio singuli in maculam trigonam dilatato) albido; abdomine oblongo-ovato, apicibus segmentorum parum incisis, segmento 4to in medio emarginato.

Long. corp. lin. 3; expans. alar. lin. 6.

Habitat in Chili. In Mus. Hopeiano Oxoniæ.

Variat coloribus plus minusve vividis, interdum valde suffusis.

*Megalybus tristis.*

Nigro-piceus, æneo parum tinctus, tuberculo antennifero cum proboscide albido, hujus apice obscuro, puncto minuto utrinque prope basin alarum guttisque quatuor prope scutellum albidis: segmento 1mo abdominis obconico, utrinque sub alulas maculâ magnâ albidâ, segmentis 2do et 3tio angustis, 4to et apicali massam ovatam formantibus; pedibus nigris, apice extremo femorum et tibiarum albido; alis infumatis, abdomine infra anguste luteo-albido.

Long. corp. lin. 3½; expans. alar. lin. 5½.

Habitat in Chili, San Juan. In Mus. Hopeiano Oxoniæ.

*Megalybus gracilis.* (Pl. V. fig. 5 and details.)

Nigro-subæneus; pronoti et mesonoti gibbosi, margine antico tenuissimo, lineis duabus abbreviatis obliquis ad angulos anticos dorsi, alterisque duabus transversis prope basin alarum, binisque longitudinalibus posticis binisque cuneatis postero-lateralibus epimerisque pone alas late albidis; abdominis segmento 1mo obconico, lateribus late albidis; segmentis 2do et 3tio angustioribus, subnodosis, utrinque maculâ trigonâ punctoque in medio marginis postici albidis, segmentis 4to et 5to crassioribus utrinque rufis, 4to margine postico lineâque abbreviatâ mediâ tenui albidis; proboscide cum tuberculo antennifero albidis; pedibus fuscescentibus, geniculis albidis: alis hyalinis, nubilâ tenuissimâ obscuriori inter medium et apicem vix distinguendâ.

Long. corp. lin. 3; expans. alar. lin. 5½.

Habitat in Chili, San Juan. In Mus. Hopeiano Oxoniæ.

*Megalybus subcylindricus.*

Piceo-niger, parum nitidus, abdomine segmentis 2do et 3tio præcedenti parum angustioribus, subcylindricis, 4to et 3tio vix crassiori; pronoti angulis posticis flavis, mesonoto lineis duabus abbreviatis anticis, alterisque duabus curvatis inter basin alarum, maculâ quadratâ antice bifidâ, ante scutellum cum margine postico tenuissimo scutelli et maculâ ad basin alularum, albido-flavis; segmentis abdominis utrinque maculâ punctoque in medio marginis postici (in segmento 4to in lineam antice extensâ); ventre albido segmentis in medio fuscis; pedibus fusco-albidis, femoribus in medio obscurioribus; alis hyalinis, interdum nubilâ tenui curvatâ pallide fuscescenti inter medium et apicem alæ.

Long. corp. lin. 2¾; expans. alar. lin. 5.

Habitat in Valdiviâ. In Mus. Hopeiano Oxoniæ.

In the specimens of this species which I have seen and which I believe are males, the proboscis is terminated by two long, divergent, curved, slender lobes, as in the genus *Systropus*.

Genus Pterodontia, Gray in Griffith, An. K., Macquart, Erichson.

This curious genus, although possessing but few species of great rarity, has a very wide geographical range.

1. *Pterodontia flavipes*, Gray, op. cit. part 34, p. 779 (Insects), pl. 128, fig. 3. Hab. Georgia in North America (incorrectly confounded by Macquart and Erichson with another species from Australia). The type is in the British Museum.

2. *Pt. Macquartii*, Westw. Trans. Ent. Soc. vol. v. p. 97.

*Pt. flavipes*, Macquart, Dipt. Exot. 1, 2, 175; Erichson, Ent. p. 164. An *Pt. Mellii*, var.? Hab. Nov. Holl.

3. *Pt. Waxelii*, Klug, Erichs. Hab. the Black Sea.

4. *Pt. Mellii*, Erichs. Entom. p. 163. Hab. Liverpool Plains, New Holland.

5. *Pt. Virmondii*, Erichs. Entom. p. 163. Hab. Brazil.

6. *Pt. analis*, Westw., op. cit. p. 97. Hab. Georgia. In Mus. Britann.

Sp. 7. *Pterodontia dimidiata*, n. sp.
(Pl. VI. fig. 1 and details.)

Nigra, nitida; nigro-hirta, abdomine segmentis 3tio ad apicem aurantio-rufis (3tio maculâ dorsali mediâ nigrâ ornato); pedibus flavidis, femoribus duobus anticis fuscis, quatuor posticis nigris; alis dimidio basali fusco, apicali hyalino; stigmate crasso, cum spinâ costali fulvâ; alulis fumosis; ventre piceo.

Long. corp. lin. 4; expans. alar. lin. 8.

Habitat in Columbiâ. In Mus. Hopeiano Oxoniæ.

Genus Pialea, Erichson, Entom. p. 160.

*Pialea? lutescens.* (Pl. VI. fig. 2 and details.)

Tota lutescens, parum pubescens; thoracis dorso magis fulvo, vittis duabus lateralibus nigris; alis luteo-hyalinis, venis luteis; antennis deflexis, articulo ultimo compresso.

Long. corp. lin. 6; expans. alar. antic. lin. 12 = unc. 1.

Habitat in Brasiliâ. In Mus. Hopeiano Oxoniæ (olim nostr.).

This species agrees with the general character of *Pialea*, as laid down by Erichson, but the antennæ are affixed on the underside of a tubercle in the middle of the face between the eyes and are deflexed, and the wings have a veinlet extending from the apex of the narrow antero-discoidal cell to the hind margin of the wings (fig. 2*c**); this veinlet is wanting in the unique species described and figured by Erichson.

### Pialeoidea, Westw.

Caput minimum, oculis inter se paullo distantibus, hirtis; ocellis duobus verticalibus. Proboscis abbreviata. Antennæ capite longiores, in tuberculum parvum ante et prope ocellos, insertæ, basi contiguæ, 3-articulatæ; articulis duobus basalibus brevibus, 3tio longo, subcylindrico, apice setoso. Scutellum transversum; abdomen ovatum, thorace vix latius; alæ breves, venis ut in *Pialeâ* dispositis, venâ mediâ rectâ longitudinali ad marginem posticum alæ tamen extendit.

Genus *Pialea* proximum, differt primo intuitu antennarum insertione ut et venâ longitudinali mediâ alarum.

*Pialeoidea magna.* (Pl. VI. fig. 3 and details.)

Obscure lutea, thoracis disco et maculis transversis abdominis nigris.

Long. corp. 7 lin.; expans. alar. 13 lin.

Habitat in Georgiâ, America. In Mus. Brit.

Syn. *Cyrtus magnus*, Walker, Cat. Dipt. B. M. i. pt. 3, p. 511, and ii. p. 336.

Obscure lutea, luteo-pilosa. Caput nigrum, luteo-pilosum; antennis piceis, articulo tertio (basi exceptâ) nigro. Thorax disco fasciisque transversis ad basin segmentorum abdominis subæneo-nigris. Pedes lutei, femoribus in medio, tibiisque subtus obscurioribus; tarsis pallidis, unguibus nigris. Tegulæ pallide fuscæ. Alæ lutescentes, venis ferrugineo-brunneis.

### Notiira, Westw.

Proboscis abbreviata. Antennæ minimæ setâ tenuissimâ terminali instructæ, hypostomate insertæ. Oculi antice contigui, hirti. Ocelli 2 verticales. Prothoracis lobi dorsales distantes. Abdomen hæmisphericum. Alarum venæ

ut in *Pterodontiâ* dispositæ, costa tamen haud calcarata, cellulâ externâ discoidali appendiculâ brevi instructâ.

*Nothra bicolor.* (Pl. VI. fig. 4 and details.)

Luteo-fulva, capite thoracis dorso maculâque triangulari in singulo segmento abdominis nigris.

Long. corp. lin. $4\frac{1}{4}$; expans. alar. lin. 9.

Habitat in Novâ Hollandiâ. In Mus. D. Hopeiano.

Caput rufum. Oculi nigro-hirti. Antennæ luteo-piceæ. Thorax luteus, luteo-hirtus, dorso plagâ magnâ nitidâ antice subito angustatâ nigrâ. Scutellum pallide luteum. Abdomen thorace paullo latius, hæmisphericum, luteo-fulvum, luteo-hirtum, basi maculâque triangulari ad basin singuli segmenti nigris; margine laterali tenui fusco. Corpus subtus luteo-fuscum. Pedes pallide lutei, unguibus nigris. Alæ hyalinæ, venis fuscis; costalibus magis luteis.

Genus Astomella, Léon Dufour.

The two insects belonging to this curious genus here described differ from the four species described by Léon Dufour, Vander Linden and Erichson (Entomographien, p. 158).

*Astomella apiformis.* (Pl. VI. figs. 5 and 5*a*.)

Nigra; thorace postice nitido, antice cum lateribus luteo-fulvo villoso; antennis deflexis, articulo ultimo valde compresso, elongato-ovato, piceo; oculis breviter nigro-setosis; abdomine oblongo, læte fulvo, segmentis duobus primis maculâ transversâ basali ornatis; 2do minori; ventre fulvo segmentis tribus apicalibus basi nigris; ano piceo; pedibus luteis, intermediis femoribus et tibiis in medio infumatis; pedibus 2 posticis obscurioribus; alis perbrevibus, vix capite cum thorace longioribus, hyalinis; venis fuscis, venâ secundâ subcostali ex apice cellulæ basalis emissâ.

Long. corp. lin. 5; expans. alar. antic. lin. 7.

Habitat in Europâ Australi. In Mus. Hopeiano Oxoniæ.

*Astomella bombiformis.* (Pl. VI. fig. 6, wing.)

Brevis, crassa, thorace piceo, luteo-villoso, lobis humeralibus et scutello magis rufo-piceis; abdomine thorace duplo majori, semigloboso, fulvo-luteo immaculato; ano incurvo; antennarum articulo ultimo oblongo-ovato, obscure fulvo, compresso; pedibus fulvo-luteis; alis brevibus, latis, hyalinis,

venis nigricantibus, venâ secundâ subcostali pone cellulam basalem emissâ.

Long. corp. lin. 4; expans. alar. antic. lin. 8.

Habitat in Europâ Australi. In Mus. Hopeiano Oxoniæ.

Genus Ogcodes, Latr., Erichs.

*Ogcodes Darwinii.*

Nigra, thorace pube tenui lutescenti sparsim induta, abdomine brunneo-fulvo, segmentis utrinque nigro-marginatis margineque postico albidis; segmentis duobus basalibus maculâ irregulari nigrâ, in 1mo segmento basi dilatatâ, in 2ndo segmento utrinque emarginatâ; pedibus fulvis, femoribus basi tarsisque nigris, abdomine infra albo; alis pellucidis, venis costalibus fulvis, discoidalibus albidis; alulis albis, hyalino-marginatis.

Long. corp. lin. $4\frac{1}{2}$; expans. alar. lin. 9.

Habitat in Adelaidâ, Nov. Holl. (C. Darwin.) In Mus. Hopeiano Oxoniæ.

*Ogcodes Fortnumi.*

Nigra, nitida, thorace parum cinereo-pubescens, abdomine piceo, apice magis lutescenti, segmentis supra et infra tenue albo-marginatis; pedibus fulvescentibus, tarsis obscurioribus; alis hyalinis, costâ cum venis costalibus albidis, reliquis vix distinguendis.

Long. corp. lin. $2\frac{3}{4}$; expans. alar. lin. $5\frac{1}{2}$.

Habitat in Adelaidâ, Nov. Holl. (Fortnum.) In Mus. Hopeiano Oxoniæ.

*Ogcodes Tasmannica.*

Nigra, thorace tenue luteo-pubescenti, abdomine fulvo segmento basali supra fere toto nigro, margine tenui luteo; segmento 2do in medio maculâ maximâ transverse-trigonâ nigrâ, margine ipso tenui lutescenti, segmento 3tio fasciâ transversâ basali nigrâ, hujus et segmenti 4ti margine postico tenui lutescenti, segmento apicali, minuto, triangulari, nigro; pedibus brunneo-fuscis; abdomine infra albido, segmentis fasciâ basali nigrâ; alis hyalinis, venis lutescentibus.

Long. corp. lin. $3\frac{2}{3}$; expans. alar. lin. 7.

Habitat in Terrâ Van Diemenii. In Mus. Hopeiano Oxoniæ.

*Ogcodes ignava.*

Nigra, thorace fusco-setosa, abdomine nigro, segmentis tenuissime albo-marginatis, segmentis 2do, 3tio et 4to pone medium fulvis, in 2do fulvedine in medio angustato; in

3tio fasciam rectam transversam formanti, in 4to maculam trigonam mediam posticam formanti; pedibus fulvis, tarsis obscurioribus; abdomine infra nigro, segmentis late albo-marginatis; alis hyalinis, venis luteis, discoidalibus, vix distinguendis.

Long. corp. lin. 3; expans. alar. lin. $6\frac{1}{2}$.

Habitat in Novâ Hollandiâ. In Mus. Hopeiano Oxoniæ.

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To the preceding genera and to those in Dr. Erichson's monograph above referred to must be added the following, which have been subsequently described in isolated articles:—

Genus Exetasis (Type *E. tumens*, Brazil), Walker in Insecta Saundersiana.

Genus Eulonchus (Type *E. tristis*, Loew, in Berlin Ent. Zeits. xvi. California, and *E. Smaragdinus*, California, Gerstäcker in Stettin Ent. Zeitung, 1856, where additional species of *Acrocera*, *Ogcodes* and *Ocnæa* are also described).

Genus Arrhynchus (Type *A. vittatus*, Chili), Philippi in Stettin Ent. Zeitung, 1871.

Genus Thersites (Type *Th. jacobæus*, Santiago), Philippi in Stettin Ent. Zeit. 1871.

Genus Opsebius (Type *O. inflatus*, S. Europe), Loew in Beschr. Europ. Dipt. ii. p. 1, where several additional species of the family are described.

Genus Mesophysa (Type *M. Australasia*, Sydney), Thomson in Eugenie Resa, p. 475.

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By way of supplement, the description and figure of a new genus of *Diptera* belonging to the *Asilidæ*, but agreeing with some of the *Acroceridæ* in the elongated proboscis and venation of the wings, are here introduced.

### Leptynoma.

Genus novum e familiâ *Asilidarum* generibus *Gonypedi* (corpore valde elongato) et *Thlipsomyzæ* (proboscide longissimâ) affine.

Caput parvum, transversum, oculis magnis, spatio angusto in medio faciei relicto; ocellis tribus verticalibus. Antennæ in medio faciei inter oculos insertæ, parvæ; articulo 1mo oblongo, 2do minuto, 3tio basi ovali apice in setam longam desinenti. Proboscis gracillima, dimidio corporis

parum longior, basi palpis duobus gracilibus curvatis instructa. Thorax ovatus, antice truncatus, capite latior, scutello semicirculari. Abdomen valde elongatum, gracile, depressum, segmentis singulis basi transversim bi-impressis serieque transversâ punctorum magnorum inter basin et primam impressionem notatis. Pedes 4 antici graciles, 2 postici multo robustiores et longiores, tibiis apice bicalcaratis, tarsis parum dilatatis, articulo basali fere longitudinem femorum æquanti. Alæ mediocres, cellulâ postero-discoidali tres venulas emittenti; venis duabus postcostalibus apicalibus retro-curvatis.

Species unica *Leptynoma sericea.*

(Pl. VI. fig. 7 and details.)

Rufo-fusca, thorace lineâ latâ mediâ (e capite ad scutellum extensâ), alterisque duabus angustis lateralibus sinuatis brunneo-castaneis sericie aureâ marginatis; abdomine fusco, sericie argenteâ vestito; alis fuscescentibus, venis majoribus obscure nebulosis, pedibus lutescentibus, posticis obscurioribus.

Long. corp. lin. 7; probosc. lin. 4; expans. alarum lin. 11.

Habitat Damara Land, Africæ merid. In Mus. Hopeiano Oxoniæ.

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## DESCRIPTION OF THE PLATES.

### PLATE V.

Fig. 1. *Panops Lamarckianus;* 1*a*, head seen from above; 1*b*, head seen from the front; 1*c*, head seen sideways; 1*d*, right wing; 1*e*, characteristic part of left wing.
Fig. 2. *Apsona muscaria;* 2*a*, head seen from above; 2*b*, head seen in front; 2*c*, antenna; 2*d*, wing.
Fig. 3. *Leucopsina Odyneroides;* 3*a*, head and humeral angles of thorax, seen from above; 3*b*, head seen in front; 3*c*, wing.
Fig. 4. *Megalybus pictus;* 4*a*, wing.
Fig. 5. *Megalybus gracilis* (magnified); 5*a*, head seen from above; 5*b*, head seen from the front, with the base only of the proboscis; 5*c*, head seen sideways; 5*d*, antenna.

### PLATE VI.

Fig. 1. *Pterodontia dimidiata;* 1*a*, wing.
Fig. 2. *Pialea? lutescens;* 2*a*, head seen from above; 2*b*, head seen sideways; 2*c*, wing.
Fig. 3. *Pialeoidea magna;* 3*a*, head seen from above; 3*b*, head seen sideways; 3*c*, wing.
Fig. 4. *Nothra bicolor;* 4*a*, head seen in front; 4*b*, antenna.
Fig. 5. *Astomella apiformis;* 5*a*, wing.
Fig. 6. *Astomella bombiformis*, wing.
Fig. 7. *Leptynoma sericea;* 7*a*, head seen in front, with base of proboscis; 7*b*, head seen sideways; 7*c*, antenna; 7*d*, wing.

## XV. *Notes of the habits of a Lepidopterous Insect parasitic on* Fulgora candelaria. By J. C. Bowring, Esq. *With a description of the species.* By J. O. Westwood, M.A., F.L.S., Pres. Ent. Soc.

[Read 2nd August, 1876.]

It is now twenty-six years since Mr. J. C. Bowring brought to England from Hong Kong specimens of a "curious Coccus-like insect, parasitic on *Fulgora candelaria*," which he deposited in the British Museum. On his return to China he endeavoured to rear the insect to the perfect state, which he succeeded in doing in June, 1850, the parasite in question proving to be the larva of a Lepidopterous insect. On the discovery being made, he forwarded further specimens to England, accompanied by the following notes:—

"No. 1 is a young larva. These are found from the size of a pin's head to fully half an inch in length attached to the dorsal surface of the *Fulgora*, there being rarely more than one parasite on a *Fulgora*, although in one instance I found three on a single specimen. When young they are destitute of the cottony covering which gives them so great a resemblance to several species of *Cocci;* but as they grow larger this makes its appearance, until they are at length densely covered with it. Arrived at this stage, they drop off from the *Fulgoræ*, and retire to some safe place where they may undergo their transformation to the pupa state. (No. 2.) Although I have not been able to discover in what way the insect spins its coating of cotton into a cocoon, it is evident that it does so, forming a comfortable-looking compact nidus, lined internally with strong and stiff material. (See No. 3, a cocoon cut open and the pupa No. 4 extracted.) The period during which the insect remains in the pupa state is very variable; in one instance it was only nine days—in another upwards of twelve months; the latter case was during our cool season, the former last month (June, 1850).

On attaining the perfect state (No. 6), the insect makes its escape from its nidus by an opening at one end, leaving the pupa case protruding therefrom about half its length (see No. 5), like the *Oiketici*. The six specimens above mentioned show the insect in all its principal stages; the eggs I have not yet seen. My breeding-cage is a large one, with gauze sides and gauze top, and in this I keep my *Fulgoræ*, which require to be kept constantly supplied with fresh branches of trees on which they feed, by thrusting their rostrum into the bark. As before mentioned, the parasites, when full grown, drop from the insect on which they have been living, and I find that they generally creep to the top of the cage, remaining back downwards. For the first day or two I can distinguish the naked underside of the insect against the gauze, but its coating of cotton grows thicker and thicker until the larva disappears totally enveloped in its warm nidus. My first specimen came out in March. On taking my morning look at the cage, I observed with pleasure that one of my little parasites had attained the perfect state; for there were the cocoon and pupa case before me. I searched carefully for the imago, which I fully expected would prove a *Curculio*, but I found nothing but a small moth already dead. This was by no means satisfactory, as the beetle, if it were one, might have eaten its way through the gauze, and the moth might have been brought in with the fresh leaves the previous day. I therefore took another specimen, which had just assumed the pupa state, and enclosed it in a small tin box, which shut closely, and whose lid was pierced with a number of minute holes to admit the air. There could be no mistake now, and night and morning I examined the box. On the 9th day I was delighted at observing that the imago had come forth. This time there could be no doubt, for a beautiful little moth, already dead, was lying by the cocoon, similar in every respect to the one I had formerly found in the cage. Nos. 5 and 6 are the cocoon and imago in question. I have to request that this series of specimens may be presented to the National Museum after being exhibited to the members of the Society. The larvæ themselves are not common; the specimen labelled 2 I consider particularly interesting. I had it in my box for some time, when one day a number of *Hymenoptera* issued from it, parasites on a parasite.

I was unable, to my regret, to capture any of these, for they were so small that they escaped through the gauze covering of my breeding-cage, and I did not perceive them until it was too late."

The special interest attached to this insect consists, first, in its being a Lepidopterous parasite, and, second, on its being parasitic upon so remarkable an insect as the *Fulgora candelaria*. Mr. Bowring, it will be noticed, leaves untouched the nature of the parasitism of this species; but it is evident from what he says that the *Fulgoræ* are not destroyed by the parasite. The following, in the absence of positive information, may probably be assumed to be the *modus operandi* of the insect. The *Fulgora* belongs to an order of insects (the *Homoptera*), of which many of the species secrete a greater or less quantity of white *waxy* matter, sometimes completely enveloping the body and sometimes forming elongated flakes, even several inches in length (*e. g.*, *Lystra auricoma*, Burmeister, Gen. Ins., pl. 20).

Mr. Bowring states that his parasites were covered with a *cottony* coat, which gives them a resemblance to a *Coccus*. Now this "cottony" covering was doubtless formed of the wax secreted by the *Fulgora;* and I have, moreover, not the least doubt that it was upon the same waxy material that the parasite fed, without in any way injuring the *Fulgora*. That the larvæ of certain Lepidopterous insects feed upon various animal matters we know well. Hair, wool, fur, bones, &c. are all eaten by the larvæ of different moths, and the moth "fretting a garment" is a well-known symbol. We know, moreover, that there are two or three different moths belonging to the genus *Galleria*, of which the caterpillars feed on wax; and although they are not immediately related to the present parasite in the perfect state, they afford, I think, sufficient grounds for our believing that it is upon the waxy secretion of the *Fulgora* that this parasite subsists.

The accompanying figures are drawn from Mr. Bowring's specimens, above described, in the British Museum, and others subsequently forwarded by that gentleman, now in the Hopeian Collection at Oxford, by whom also the manuscript name, subsequently adopted in this paper, was proposed, no description of the insect having hitherto appeared, so far as I am aware.

EPIPYROPS.*

Genus novum, e familiâ *Arctiidarum*.

IMAGO.—Corpus parvum.

Caput mediocre, palpis minimis; oculi laterales subglobosi. Antennæ mediocres, graciles, articulis circiter 18, 16 ultimis longe biramosis, ramis gracilibus ciliatis. Thorax crassus, brevis. Tegulæ reniformes. Alæ satis magnæ, anticæ trigono-ovales, venâ costali simplici; venâ postcostali quasi 4-ramosâ, ramo 5to (fig. 15, *b* 5, ramum supero-discoidalem simulante), ramo supero-discoidali (*b* 5*) infernm simulante, ramoque infero-discoidali (*c* 3*) ramum 4um medianum (ut in Papilionibus veris) simulante; alæ posticæ ovales, abdominis longitudinem superantes; venâ postcostali (fig. 17 *b*) bifidâ, venâ medianâ quasi 4-ramosâ, venâ discoidali (fig. 17, *c* 3*) ramum quartum medianum simulante, basi ejus (*z*) in cellulam discoidalem extensâ, parteque ejus mediâ (*x*) cellulam discoidalem claudente. Pedes graciles, tibiæ anticæ (fig. 18) et mediæ (fig. 19) absque calcari in medio marginis antici; spinisque duabus minutis apicalibus.

LARVA.—Obesa, nuda, haud spinosa vel tuberculata, pedibus 6 pectoralibus, 8 ventralibus (2 analibus?). Mandibulæ apice bidentatæ; maxillæ palpo minimo biarticulato instructæ. Labium magnum, tuberculo filum emittente. Oculi laterales utrinque ex ocellis circiter 7 formati. Antennæ minutæ (fig. 4). In folliculo cereo supra *Fulgoræ candelariæ* dorsum parasitice degens, ceramque? manducans.

PUPA.—Brevis, crassa, in cellulâ coriaceâ intus folliculum larvæ quiescens; dorso lævi, nec spinosâ, per partem superam ruptam folliculi pro transformatione ultimâ ex parte protrudens.

*Epipyrops anomala.* (Pl. VII.)

Brunnea, albo-squamosa, tegulis incisurisque abdominalibus albo-hirtis; alis anticis brunneis, albo parum irroratis; costâ serie guttarum albidarum notatâ, apicali majori, maculâque indistinctâ albidâ ad apicem cellulæ discoidalis, cilio punctisque parvis marginalibus albis; alis posticis fuscis, cilia alba.

Long. corp. 4; expans. alar. antic. 14.

Habitat in Chinâ. Hong Kong (Bowring).

In Mus. Britann. et Hopeiano Oxoniæ.

* This name is given in allusion to the insect being found upon *Fulgora* (*Pyrops*) *candelaria*.

The general appearance of this moth approaches nearest to the *Arctiidæ;* its habits are, however, far removed from those of any known species of that family. As a wax feeder it agrees with the *Galleriæ*, but its general character removes it far from that group. The *Euplocami* amongst the *Tineidæ*, which contains a number of sack-bearing species, have the antennæ bipectinated, but their general character is equally removed from that of *Epipyrops*. The sack-bearing habits of the *Psychides* may indicate a nearer approach to this insect, which has, however, very little of the habit of that group. The arrangement of the veins of the fore-wings is interesting, the median vein having apparently four branches, as in *Papilio*, and the postcostal vein has apparently only four branches, but the normal number of branches to these veins exists—namely, five branches to the postcostal, and three branches to the median, with two intermediate veins (or rather branches) which correspond with the upper discoidal vein of E. Doubleday (which I consider normally to belong to the postcostal system) (fig. 15, *b* 5*), and the lower discoidal of E. Doubleday (which I consider normally to belong—as here seen—to the median system) (fig. 15, *c* 3*).

## DESCRIPTION OF PLATE VII.

Fig. 1. The delicate exuvia cast by the young larva.

Fig. 2. The full grown larva from the dried specimen, dorsal view.

Fig. 3. The ventral surface of the same.

Fig. 4. Front view of the head of the larva.

Fig. 5. Parts of the mouth of the larva seen from below.

Fig. 6. The waxy cocoon formed by the larva.

Fig. 7. The same with the front part of the pupa protruded.

Fig. 8. The same with the slit formed by the exit of the perfect insect.

Fig. 8*a*. Head of the exuvia of the larva.

Fig. 9. The pupa seen ventrally.

Fig. 10. The same, dorsal view.

Fig. 11. The perfect insect.

Fig. 12. Head of ditto seen in front.

Fig. 13. One of the tegulæ.

Fig. 14. Fore-wing denuded of scales.

Fig. 15. Characteristic portion of fore-wing: *a*, costal vein; *b*, postcostal vein, and its branches *b* 1, *b* 2, *b* 3, *b* 4, *b* 5, together with the supplementary branch (upper discoidal vein) *b* 5*; *c*, the median vein, with its branches *c* 1, *c* 2, *c* 3, and the supplementary branch (lower discoidal vein) *c* 3*; *y* and *z*, basal portions of the two supplementary branches within the discoidal cell; *d* and *e*, anal veins.

Fig. 16. Hind-wing denuded of scales.

Fig. 17. Characteristic part of hind-wing: *a*, costal vein; *b*, postcostal vein, with its two branches *b* 1 and *b* 2; *c*, median vein, with its branches *c* 1, *c* 2, *c* 3, and the supplementary branch *c* 3*, of which the basal portion *z* runs through the middle of the discoidal cell; its middle portion *x* is employed partially to close the discoidal cell; *d*, *e*, *f*, anal veins.

Fig. 18. Fore leg.

Fig. 19. Middle leg.

## XVI. *Monograph of the British species belonging to the* Hemiptera-Homoptera, *family* Psyllidæ; *together with the description of a genus which may be expected to occur in Britain.* By John Scott.

[Read 1st March, 1876.]

I have been induced to undertake the present Monograph for two reasons, viz.: first, because such a thing has not previously been attempted, and I therefore thought it desirable for the sake of science to bring together and describe all those species in my own collection as well as those in the collections of others which have been kindly lent for this purpose; secondly, because the Catalogue now in course of publication by the Entomological Society of London will thus be rendered more complete. I have also added translations of the original descriptions of some species which I have not seen, but which were taken by Messrs. Haliday and Walker, and forwarded to Dr. Förster at Aix, where they appeared in the "Verhandlungen des naturhistorischen Vereins der preussischen Rheinlande" for 1848. That author's generic divisions are natural and easy of recognition, but his diagnoses of the various species are meagre in the extreme, and, in many instances, not sufficient to lead to their identity. The same remarks also apply to the descriptions of Meyer-Dür, published in the "Mittheilungen der schweizerischen entomologischen Gesellschaft," vol. iii. On the other hand, Dr. Flor, in his "Rhynchoten Livlands," vol. ii., and in a paper published at Moscow in 1861, under the title "Zur Kenntniss der Rhynchoten," has more than compensated for the incompleteness of the others by the elaborate descriptions he there gives. He is pre-eminently *the* man in this group, and his works have afforded me valuable assistance in determinating between species where I had any doubt. I have followed other authors by placing this group where it now stands, but I am not prepared to say that this is its true position, as it possesses some points in common with the true *Cicadidæ*.

The best methods I have found for the capture of these tiny creatures is by sweeping and by beating trees and bushes into a sweeping-net or inverted umbrella. I then put such species as I have found on a particular tree or bush or plant into a small glass tube, of which I carry a quantity ready labelled on which to write with a pencil the name of such tree, bush or plant, so that when I come to set them I am at no loss to know where they came from; and although three or four species may be found on one tree, yet I believe this is accidental, or for the purpose which I shall mention presently, as each species, like the *Aphidæ*, seems to have its special food plant. Dr. Flor and M. Lethierry give many species as found by them upon firs, and these are generally taken in early spring or very late in the season. May they not have assembled there for the purpose of hibernation, as these trees would afford them an excellent retreat? The two seasons would seem to point to this.

In conclusion I may add that I shall be glad to examine and name to the best of my ability any species which may be sent to me for this purpose, as I feel certain I have not yet exhausted the riches of the group.

## Family PSYLLIDÆ.

*Head*, including the eyes, generally broader than long. *Crown* horizontal, or more or less deflected. *Ocelli* three, placed one in front and one near each eye, close to or almost on the posterior margin. *Face* with or without lobes. *Antennæ* 10-jointed, inserted before the eyes; two basal joints stout, generally shortish; remainder filiform; apex of the last joint furnished with two projecting hairs of unequal length. *Eyes* globose, placed on the side of the head.

*Thorax: pronotum* small, collar-shaped; *mesonotum* large, exposed, very convex, divided laterally into three unequal portions; anterior portion more or less shuttle-shaped, posterior portion largest, broad, with a scutelliform process attached to the posterior margin. *Scutellum* minute, rounded posteriorly. *Elytra* fully developed in both sexes; longer than the abdomen, and either acute or rounded at the apex; costal margin with or without a stigma; from the nerve of the external basal cell, whose apex reaches the costal margin before the middle, proceed the following nerves, viz., the radius, generally running

almost parallel with the costal margin to the apex; the cubitus divided into two arms, each of which is bifurcate before reaching the apical and dorsal margin; cubitus with or without a petiole. *Legs* formed for springing; 3rd pair; *coxæ* with a long spine on the underside. *Tibiæ;* 3rd pair with a fringe of very short stout spines at the apex. *Tarsi* 2-jointed, subequal. *Claws* two.

*Abdomen* with six segments visible from above; genital processes of the ♂ generally pincers-shaped, such as those used by a smith; ♀ with a long, projecting, stout, pointed, ovipositor.

Primary characters of the various genera.

1. Face produced into two lobes of greater or less length. Antennæ 10-jointed; 1st and 2nd joints (except in *Livia*) short, stout, remainder filiform; 3rd generally longest.
   Cubitus always divided into two arms, each of which becomes bifurcate before reaching the apex.

- Elytra coriaceous, costa without a stigma, cubitus petiolate . . 1. *Livilla.*
- Elytra membranaceous
  - apex rounded
    - costa without a stigma, cubitus petiolate . 2. *Arytæna.*
    - costa with a stigma, cubitus petiolate . 3. *Psylla.*
  - lanceolate .
    - costa with a stigma, cubitus petiolate . 4. *Spanioneura.**
    - costa without a stigma, cubitus not petiolate . . . . 5. *Trioza.*

2. Face not lobate.

- Elytra membranaceous, apex rounded.
  - costa without a stigma, cubitus petiolate . 6. *Aphalara.*; 7. *Euphyllura.**
- Elytra coriaceous, more or less lanceolate.
  - costa with a stigma, cubitus petiolate . 8. *Rhinocola.*
  - costa without a stigma, cubitus petiolate . 9. *Livia.*

## Genus Livilla, Curt.

*Head: crown* divided into two lobes by a central longitudinal channel; anterior margin of the lobes rounded; disk with a deep fovea on each side. *Ocelli* three, placed one on the posterior margin close to each eye, and one in

* Not a British genus.

front, at the base of the cleft. *Face:* lobes long, stout, almost cylindrical. *Antennæ* longer than the head and thorax; 1—2 joints short, stout; remainder filiform; 3rd about twice as long as the 4th.

*Thorax: pronotum* narrow, collar-shaped, with two foveæ on each side near the lateral margin; *mesonotum* large, exposed, flattish convex, divided into three irregular portions by two transverse channels. *Elytra* coriaceous; longitudinally ovate, convex; transversely very convex; costa without a stigma.

Species 1. *Livilla ulicis.*

*Livilla Ulicis*, Curt. B. E. 625, and pl.; Först. Verh. Ver. Rheinl. v. 68, 1; *Livilla coleoptrata*, Klug, Isis, 277 (1837).

Deep pitchy-brown, shining.

*Head: crown* deep chestnut or black, divided longitudinally into two lobes by a central channel; anterior margin of the lobes rounded, posterior margin concave. *Face:* lobes long, stout, almost cylindrical to the slightly narrowed and rounded apex; clothed with very fine hairs. *Antennæ* black; 1—4 joints yellow or yellowish-white; apex of the 4th frequently brown.

*Thorax: pro-* and *meso-notum* and *scutellum* black. *Elytra* coriaceous, deep pitchy-brown; finely wrinkled transversely; nerves black; costa without a stigma. *Wings* small, fuscous. *Legs* yellow. *Thighs:* 3rd pair brown, apex pale. *Claws* dark brown.

*Abdomen* above black.

Length 1—1¼ line.

A perfect anomaly, and when at rest more resembling a seed of some plant than an insect.

Curtis has omitted the external basal cell of the elytra in his figure. I have old specimens taken by Mr. Wollaston, and more recent ones captured by Dr. B. White.

It occurs upon furze bushes (*Ulex Europæus*), in June, but appears to be local.

Genus Arytæna.

Arytaina, *Först.*

*Head* much broader than long. *Crown* slightly deflected; without the eyes almost pentagonal, with two foveæ almost in the centre; width between the eyes more than twice the length, measured down the centre, which

is divided by a channel, leaving a small notch in front; posterior margin angulate. *Ocelli* three, placed one in the frontal notch, and one adjoining each eye, almost on the posterior margin. *Face* lobate. *Antennæ* 10-jointed; two basal joints short, stout, somewhat obconic; remainder filiform; 3rd longest. *Eyes* large, placed on the sides of the head; viewed from above, the outer margin very convex; inner margin *straight*, almost parallel with the central channel.

*Thorax: pronotum* collar-shaped; lateral margins contracted posteriorly; on each side two foveæ; *mesonotum*, anterior portion shuttle-shaped; posterior portion at its greatest breadth about equal to the width of the head *without the eyes*. *Scutellum* minute, apex rounded. *Elytra* almost uniform in width from in a line with the base of the cubitus; *corium*, costal margin without a stigma; cubitus petiolate.

### Species 1. *Arytæna ulicis.*

*Psylla Ulicis*, Curt. B. E. 565, 22 a (1835); *Psylla Spartii*, Hartig, Germ. Zeits. iii. 375, 9 (1841); Leth. Hém. Nord, ed. ii. 88, 3 (1874); *Arytaina Spartii*, Först. Verh. Ver. Rheinl. v. 69.

Green, dusky yellow or red. *Mesonotum* posteriorly with five longitudinal, brown or black streaks. *Elytra* transparent, with a black or brown longitudinal streak between the radius and cubitus, and three others at the margin alternating with the nerves.

*Head: crown*, foveæ and generally a small spot in front of each dark brown or black. *Ocelli* bright red. *Face* variable in colour; lobes clothed with fine, pale hairs; apex of each lobe with a long, fine, pale hair. *Antennæ* dark brown or black, 2—5 yellow, apex of 3—5 narrowly brown.

*Thorax: pro-* and *meso-notum* green, dusky yellow or red; foveæ on the former dark brown, and five longitudinal streaks on the posterior portion of the latter dark brown or black. *Scutellum* generally yellow. *Elytra* transparent; *corium*, nerves frequently pale, except the radius and the bifurcations of the cubitus; between the radius and the cubitus a broad brown or black streak extending from the base of the former to the apex; alternating with the nerves round the apex, three small patches attached to the marginal nerve by a fine line; claval suture with a

fuscous-black or brown margin. Frequently these characters are more or less indistinct. *Legs* generally yellowish. *Thighs* more or less dark brown.

*Abdomen* black, posterior margin of the segments narrowly yellowish or orange; genital processes yellow, apex black.

Length 1½ line.

I have restored Curtis's name for this insect as it is some years older than that of Hartig.

A very common species on furze bushes from May to August.

## Genus Psylla.

*Head* broader than long. *Crown* considerably deflected; without the eyes broader than long; divided down the centre by a channel, and with a fovea on each side; the space between the foveæ and the inner margin of the eyes much elevated or callus-formed; posterior margin more or less concave. *Ocelli* three, placed one in the frontal notch and one near each eye, adjoining the posterior margin on the summit of the elevated portion. *Face* lobate; lobes variform. *Antennæ* 10-jointed; two basal joints short, stout, somewhat obconic; 3—10 filiform; 3rd longest, 9—10 together about equal to the 8th; 10th with two projecting fine hairs of unequal length. *Eyes* large, placed on the side of the head; viewed from above the outer margin very convex, inner margin slightly convex and lying at an angle to the central channel.

*Thorax: pronotum* narrow, collar-shaped, with two foveæ near the lateral margins, which last are incrassated; posterior margin concave; *mesonotum*, anterior portion more or less obtuse, shuttle-shaped; base generally dentiform at its extremities; posterior portion across the middle as broad as or *broader than the head and eyes together*. *Scutellum* minute, apex rounded. *Elytra* generally transparent, rounded at the apex; costal margin at the base very convex, from thence straight or slightly convex, with a stigma sometimes almost obsolete. *Cubitus* petiolate.

Differs from the genus *Arytæna* by having a smaller and more deflected crown, the two basal ocelli placed on a callus-formed elevation, the eyes lying at an angle to the central channel, and more particularly by its greater breadth of mesonotum, in which respect it approaches the genus *Trioza*.

Species with the costal stigma obsolete or almost obsolete: *Försteri, alni, buxi, spartiophila, hippophaës.*

„ with the elytra more or less yellowish or testaceous: *Försteri, buxi, hippophaës, spartiophila, sylvicola, Löwii.*

„ with brown elytra: *pruni.*

„ with dark clouds or patches between the nerves: *pyri.*

„ with a black or dark streak along the dorsal margin next the apex of the clavus: *salicicola, rhamnicola.*

„ spotted round the apex: *costatopunctata, ferruginea.*

„ with a black band before the apex: *fraxini.*

### Species 1. *Psylla Försteri.*

*Psylla Försteri*, Flor, Rhyn. Livl. ii. 458, 2; Leth. Hém. Nord, ed. ii. 88, 2; *Psylla Alni*, Förster, Verh. Ver. Rheinl. v. 70, 1.

Pale green, yellow or greenish-yellow. *Face:* lobes short, sparingly clothed with fine pale hairs, and with one long one projecting from the apex. *Antennæ* very long, 4—8 joints gradually growing more broadly black at the apex; 9—10 black. *Elytra* faintly testaceous or almost clear, transparent; costal nerve frequently bright green.

*Head: crown* very broad, posterior margin deeply concave. *Face:* lobes short, sparingly clothed with fine pale hairs; about as long as the crown down the centre; cone-shaped, with a long, stoutish hair projecting from the apex; base broad. *Antennæ* very long, clothed with very short somewhat erect hairs; 4—8 joints gradually growing more broadly black at the apex; 9—10 black; 4th about two-thirds the length of the 3rd; 5—6 subequal; 7th longer than the 3rd.

*Thorax: pro-* and *meso-notum* pale green, yellow or greenish-yellow. *Elytra* faintly testaceous, sometimes almost clear, transparent; nerves entirely yellow or with the costal margin bright green; stigma almost obsolete. *Legs* pale green or yellow. *Tarsi:* 2nd joint brownish. *Claws* dark brown.

*Abdomen* pale green, or greenish-yellow.

Length ♂ $1\frac{3}{4}$, ♀ $2\frac{1}{4}$ lines.

This species stands next in size to *P. Alni*, from which

it may be distinguished by the want of the black spot at the base of the tibiæ and the faintly-coloured elytra, as well as the difference in the form of the genitalia.

Exceedingly abundant on alders (*Alnus glutinosa*), from June to the end of October.

Species 2. *Psylla alni.*

*Chermes Alni*, Lin. F. S. 262, 1008; S. N. ii. 738, 10; Fab. E. S. iv. 222, 12; Scop. Ent. Carn. 140, 417; De Geer, Mém. iii. 96, 3, t. 10, fig. 8; *Psylla Alni*, Burm. Hdb. ii. 98, 1; Flor, Rhyn. Livl. ii. 460, 3; Leth. Hém. Nord, ed. ii. 90, 8; *Psylla fuscinervis* and *Heydeni*, Först. Verh. Ver. Rheinl. v. 20, 2 & 81, 32.

Green, yellowish, red or reddish. *Face:* lobes short, stumpy, conical, diverging towards the apex. *Mesonotum* frequently with two longitudinal, oval, light or dark-brown patches on the posterior portion; costal stigma narrow, somewhat short. *Tibiæ* with a small black spot exteriorly at the base.

*Head: face*, lobes conical, short, stumpy, base broad, about equal to the length, divergence at the apex about equal to the base of either. *Antennæ* yellow, reaching almost to the base of the stigma; 1st joint broadly black at the base, 3—7 brown at the apex, 8—10 brown, 3rd and 7th almost equal in length, 4—6 subequal.

*Thorax: mesonotum* in yellow or green examples with or without two light-brown, oval patches on the posterior portion; in red or reddish examples these characters are darker. *Elytra* clear, transparent or slightly dimmed, as if having been breathed upon; nerves dark brown or black from the base of the cubitus to the apex; costal nerve bright green, ciliate, the hairs very minute; stigma green, narrow, somewhat short. *Legs* yellowish or green. *Thighs:* 1st and 2nd pairs frequently with a short, more or less distinct, brown streak on the upper side before the apex. *Tibiæ* with a small black spot exteriorly at the base.

*Abdomen* generally green.

Length 2½ lines.

One of the largest European species and most easily recognized by the black spot on the tibiæ.

Not common. The only examples I have seen, in addition to my own, were taken by Dr. Power and Mr.

Douglas. It occurs on alders (*Alnus glutinosa*) in August.

Species 3. *Psylla spartiophila.*

*Psylla spartiophila*, Först. Verh. Ver. Rheinl. v. 75, 18; *Psylla torifrons*, Flor, Kennt. Rhyn. 30, 2.

Orange yellow or somewhat reddish, with red-brown streaks on the mesonotum more or less distinct in different individuals. *Face:* lobes extremely short. *Antennæ* yellow or slightly reddish, reaching beyond the apex of the external basal cell; 4th joint, apex broadly black, 5—10 black. *Elytra* faintly testaceous, darker towards the apex, transparent; base generally clear as far as the apex of the external basal cell; nerves yellow; costal stigma almost obsolete, sometimes the nerves are finely dark brown, and apparently very narrowly margined with brownish-testaceous.

*Head* orange yellow or reddish. *Crown* between the eyes more than twice the length down the centre; posterior margin concave, foveæ dark brown. *Face:* lobes very short, about half the length of the crown down the centre; base very broad; apex bluntly rounded. *Antennæ* yellow or slightly reddish, long, reaching beyond the apex of the external basal cell; 4th joint, apex broadly black, 5—10 black, 4th about three-quarters the length of the 3rd.

*Thorax: pronotum* generally pale yellowish-white, foveæ dark brown; *mesonotum* orange yellow or reddish, posterior portion with a broad yellowish-white stripe down the centre, or with four red-brown longitudinal streaks, more or less distinct, or partly or entirely wanting in different individuals. *Elytra* faintly testaceous, darker towards the apex, moderately rounded, transparent; base generally clear as far as the apex of the external basal cell; nerves yellow, stoutish, sometimes slightly darker towards the apex; distance between the apices of the nerves of the lower or dorsal bifurcation of the arm of the cubitus almost equal to twice the length of the inner branch of the same; costal stigma almost obsolete. *Legs* yellow or somewhat orange. *Tarsi:* 2nd joint and *claws* black.

*Abdomen* above generally black, posterior margin of the segments more or less broadly yellow; ♂ genital segments yellow; processes long, yellow; apex brown, exteriorly clothed with very short, fine, pale hairs.

Length 1¼ line.

This insect belongs to the same section as *P. Försteri*, *Buxi*, &c., owing to the shortness of the frontal lobes, and the almost total absence of a costal stigma; but from its smaller and more delicate appearance, independent of the form of the genitalia, it is easily distinguished.

Apparently not uncommon in May and June on broom (*Spartium scoparium*). It is in the collections of Mr. Douglas, Dr. Power, and my own.

Species 4. *Psylla buxi.*

*Chermes Buxi*, L. S. N. ii. 738, 7; Reaumur, Ins. iii. t. 19, fig. 1—14; Fab. E. S. iv. 221, 5; S. R. 304, 5; *Psylla Buxi*, Först. Verh. Ver. Rheinl. v. 71, 3; Leth. Hém. Nord, ed. ii. 90, 10.

Green or yellowish-green. *Face:* lobes short, divergence at the apex small, outer margin much more rapidly inclined than the inner one. *Mesonotum* not unfrequently with two triangular orange patches on the anterior portion and four others of the same colour on the posterior portion. *Elytra* and nerves testaceous, the former shining; costal stigma wanting. *Thighs* frequently brown.

*Head: crown* pale green or dark brown, or the base dark brown. *Face* pale green or yellowish or greenish-white, clothed with fine, pale hairs; lobes short, slightly divergent at the apex, outer margin much more rapidly inclined than the inner one. *Antennæ* yellow, reaching to about in a line with the apex of the petiole of the cubitus: 3rd joint about as long as the 4th and 5th together; 4—8 narrowly brown at the apex, 9—10 dark brown.

*Thorax: pro-* and *meso-notum* greenish or yellowish-green; anterior portion of the latter generally with two triangular orange-coloured patches in front, posterior portion with four orange-coloured patches; the two interior oval, the two exterior somewhat trapezoidal. *Elytra* and nerves testaceous; costal stigma wanting. *Legs* dusky yellow. *Thighs* sometimes dark brown, apex dusky yellow.

*Abdomen* generally green.

Length $1\frac{3}{4}$ line.

Not unfrequently the crown, pro- and meso-notum are entirely dark brown or piceous, the posterior portion of the latter on the sides with two or three short, pale, longitudinal lines.

An extremely common species on box trees (*Buxus sempervirens*); everywhere from May to October.

Species 5. *Psylla hippophaës.*

*Psylla Hippophaës*, Först. Verh. Ver. Rheinl. v. 73, 12; Leth. Hém. Nord, ed. ii. 91, 14; *Psylla Alaterni*, Först. Verh. Ver. Rheinl. v. 97, 5; *Psylla Hartigii*, Flor, Rhyn. Livl. ii. 469, 8.

Pale yellow or greenish-white. *Face:* lobes very long, clothed with fine, pale hairs; base broad; exterior margin concave, inner margin straight. *Antennæ* yellow; 4—8 joints narrowly dark brown at the apex, 9—10 dark brown or black. *Elytra* very pale testaceous, transparent, nerves pale; costal stigma almost obsolete.

*Head* pale yellow or greenish-white. *Crown:* posterior margin concave. *Face:* lobes very long, clothed with fine pale hairs; base broad; exterior margin concave; inner margin straight, from the middle to the slightly narrowed and rounded apex almost cylindrical. *Antennæ* yellow, reaching to beyond the base of the stigma; 4—8 joints at the apex narrowly dark brown, 9—10 dark brown or black.

*Thorax: pro-* and *meso-notum* pale yellow or greenish-white sometimes intermixed. *Elytra* very pale testaceous; nerves fine, pale; external basal cell clear; costal stigma almost obsolete. *Legs* yellow. *Claws* brown.

*Abdomen* pale green.

Length $1\frac{1}{2}$ line.

An easily-distinguished species from the shape of the frontal lobes and the almost obsolete stigma.

Not uncommon on the sea buckthorn (*Hippophaë rhamnoides*), at Deal, in August.

Förster received the above insect from Mr. Haliday under the name of *Alaterni*, and so described it. In his foot-note, Förster says he has doubts as to whether this species may not be the *Psylla Rhamni*, Schrank. That it is impossible to say, I give that author's description from the "Fauna Boica," ii. 141, 1249 (1861):—

"*Chermes Rhamni.*

"Wohnort am Kreugbeerstrauche.

"Im Junius.

"Anmerk. Die Larve grün, flachgedrückt, schildformig, mit durchscheinigen Leibe, der Rand der Flügelscheiden und des gerundeten Hinterleibes gefranzet. *Das vollendete Insect konne ich nicht.*"

Species 6. *Psylla pyri.*

*Chermes Pyri*, Lin. F. S. 262, 1004; S. N. ii. 737, 4; Fab. E. S. iv. 221, 3; S. R. 303, 3; De Geer, Mém. iii. 91, 2, t. 9, fig. 1—16; *Psylla Pyri*, Curt. B. E. xii. 565, 5; Först. Verh. Ver. Rheinl. v. 77, 24; Flor, Rhyn. Livl. ii. 463, 5; *Psylla apiophila*, Först. Verh. Ver. Rheinl. v. 78, 26.

Dusky red or reddish-yellow, with dark brown streaks on the mesonotum. *Face:* lobes about as long as the crown down the centre, exterior and interior margins tapering towards the narrow apex, where the divergence from each other is about equal to the base of either of them. *Antennæ* yellow; 1st joint frequently dusky red; 3—5 black at the apex, 6—10 dark brown or black. *Elytra* clear, transparent; nerves fine, dark brown or black, spaces enclosed between them more or less distinctly stained with fuscous; costal marginal nerve and stigma yellow or pale red, the latter wide and long.

*Head* dusky red. *Crown:* posterior margin slightly but distinctly concave; foveæ dark brown; margins of the central channel more or less yellowish-white. *Face:* lobes dusky or reddish-yellow, with the apex sometimes pale, about as long as the crown down the centre, base somewhat broad, exterior and inner margins tapering towards the narrow apex, divergence at the latter about equal to the base of either of them. *Antennæ* yellow, not reaching to the base of the stigma; 1st joint frequently dusky red, 3—5 black at the apex, 6—10 dark brown or black; 4th about two-thirds the length of the 3rd.

*Thorax.—Pronotum* dusky yellowish-white. *Mesonotum* dusky reddish-yellow, anterior portion in front broadly dark brown or black, with a central, longitudinal line and posterior margin yellowish-white; posterior portion with a fine central, longitudinal, dark-brown line; an almost oval patch on each side dark brown, and beyond this a broad streak of the same colour. *Elytra* clear, transparent; nerves fine, dark brown or black, spaces enclosed between them more or less distinctly stained with fuscous down the centre; costal marginal nerve and stigma yellow or pale red, the latter wide and long; claval suture on both sides more or less broadly and distinctly margined with fuscous; apex of the clavus with a short black streak. *Wings* clear, transparent, costal margin and nerves of the

appendix blackish. *Legs* yellow or brownish-yellow. *Thighs* black, apex yellow. *Tarsi:* 1st and 2nd joints, or the 2nd only, and *claws* black.

*Abdomen* dark brown or black; posterior margin of the segments narrowly reddish or yellow.

Length $1\frac{1}{4}$ line.

The markings on the elytra are a peculiar characteristic of this species. It lives on pear trees, and is to be found from June to October. Of its mode of life, Curtis gives a short account in his B. E. xi. 565, 5. I have only seen old examples taken by the late Mr. J. C. Dale.

Species 7. *Psylla salicicola.*

*Psylla salicicola*, Först. Verh. Ver. Rheinl. v. 72, 7; Flor, Rhyn. Livl. ii. 467, 7; Leth. Hém. Nord, ed. ii. 89, 7.

Green, or yellow intermixed with green, or orange intermixed with streaks of yellowish-white. *Face:* lobes longish, about equal in length to the crown down the centre; base very slightly broader than in the middle, where the outer margin runs off obliquely towards the apex, which is more or less broadly rounded. *Antennæ* yellow; 3—7 joints black at the apex; 9—10 and sometimes the 8th dark brown or black. *Elytra* clear, transparent; nerves, according to the colour of the mesosternum, pale or dark; dorsal marginal nerve next the apex of the clavus with a dark brown or black streak; costal stigma somewhat broad and long.

*Head* green or orange. *Crown:* posterior margin distinctly concave. *Face:* lobes longish, about equal in length to the crown down the centre; inner margin almost straight, scarcely diverging; base very slightly broader than in the middle, where the outer margin runs off obliquely to the apex, which is more or less broadly rounded. *Antennæ* yellow, reaching to or beyond the base of the stigma; 3—7 joints black at the apex, 9—10 and sometimes the 8th dark brown or black; 4th about three-fourths the length of the 3rd.

*Thorax: pronotum* pale greenish or greenish-white; *mesonotum* in yellow examples with the anterior portion more or less pale green; posterior portion generally with four longitudinal greenish-white lines; in orange-coloured specimens the anterior portion with a narrow longitudinal central line, and the lateral points pale yellowish-white;

posterior with a narrow pale yellowish-white line down each side of the centre, and two others of the same colour exterior. *Elytra* clear, transparent; nerves pale yellow, clear, or dark brown, according as the insect is coloured. Costal stigma somewhat broad and long; dorsal marginal nerve next the clavus with a short dark brown or black streak. *Legs* pale yellow. *Tarsi:* 2nd joint and *claws* generally dark brown.

*Abdomen* green or brown; in the latter case the margins of the segments are pale.

Length $1\frac{1}{4}$—$1\frac{1}{2}$ line.

Allied to *P. cratægicola*, which insect differs from the above in the want of the streak on the margin at the apex of the clavus, the different form of the face-lobes and the colouration of the antennæ.

Not uncommon on sallows from June to September. I have also beaten it from larch (*Larix communis*) in August.

Species 8. *Psylla pineti.*

*Psylla pineti*, Flor, Rhyn. Livl. ii. 471, 10; Leth. Hém. Nord, ed. ii. 91, 15; *Psylla ornata*, Meyer, Mitth. schw. ent. Ges. iii. 393.

Red, or brown-red, with lighter or darker streaks on the mesonotum. *Face:* lobes as long as the crown down the centre, base somewhat narrow, exterior margin sloping gently from the base to the middle, afterwards to the apex almost straight; inner margin straight; divergence moderate. *Antennæ* short, yellowish or reddish-yellow; 1st joint blackish, 4—5 at the apex black, 6—10 black. *Elytra* with an extremely faint testaceous tinge, transparent; nerves fine, light or dark brown; costal stigma wide and long.

*Head* reddish or brown-red. *Crown:* posterior margin concave. *Face:* lobes red or red-brown, as long as the crown down the centre, base somewhat narrow, exterior margin sloping gently from the base to the middle, from thence to the apex almost straight; inner margin straight, apical half almost cylindrical. *Antennæ* yellowish or reddish-yellow, short, not reaching to the base of the stigma; 1st joint blackish, 4—5 black at the apex, 6—10 black; 4th about three-fourths the length of the 3rd.

*Thorax: pronotum* red; *mesonotum* red or brown-red; posterior portion with four pale or red longitudinal streaks placed one on each side of the centre, and another,

curved, more remote; in dark examples these are sometimes almost obsolete. *Elytra* with an extremely faint testaceous tinge, transparent; nerves fine, pale or dark brown; costal stigma wide, long. *Legs* yellowish or reddish, or brownish-yellow. *Thighs* pitchy brown; apex pale or frequently reddish, with a pitchy-black line on the inside near the upper margin. *Tarsi:* 2nd joint and *claws* brown.

*Abdomen*, in pale examples, bright green or reddish-yellow; in dark ones black; side margins narrowly bright red.

Length $1\frac{1}{2}$ line barely.

Extremely variable in colour on the body; and according to the colour there, so are all the other portions of the insect.

Mr. Douglas has taken it somewhat commonly on Scotch fir (*Pinus sylvestris*), and Dr. Power has also met with it at Holm Bush, Mickleham, &c., from May to November.

Species 9. *Psylla sylvicola.*

*Psylla sylvicola*, Leth. Hém. Nord, ed. ii. 90, 11 (1).

Orange yellow. *Face:* lobes about as long as the crown down the centre; apex narrow; divergence less than the base of either of them. *Antennæ* somewhat short, not reaching to the base of the stigma; 3—7 black at the apex; 8—10 black. *Elytra:* pale brownish-testaceous, transparent; nerves yellow, somewhat fine; costal stigma wide, gradually tapering to the apex.

*Head* orange yellow. *Crown:* posterior margin concave. *Face:* lobes orange yellow, or sometimes pale green, about as long as the crown down the centre; base somewhat broad; exterior and interior margin sloping gradually to the narrow apex; divergence at the latter less than the base of either of them. *Antennæ* somewhat short, not reaching to the base of the stigma; 3—7 at the apex black; 8—10 black; 4—5 together a little longer than the 3rd.

*Thorax: pro-* and *meso-notum* orange yellow, without paler or darker streaks.

*Elytra* pale brownish-testaceous, transparent; nerves yellow, somewhat fine; costal stigma wide, gradually tapering to the apex. *Legs* testaceous. *Tarsi:* 2nd joint and sometimes the 1st also brown. *Claws* brown.

*Abdomen* above yellow; ♂ four basal segments with a

very fine transverse black line before the pale posterior margin; genital segments yellow; processes yellow; extreme apex brown.

Length ♂ 1¼, ♀ 1½ line.

The sexes are alike in colouring in every respect. It differs from *P. pruni* in being larger and paler than that species, difference in the shape of the frontal lobes and colouration of the elytra.

I have one specimen, taken either at Eltham or Bexley, in May, 1863; and Dr. Power has taken a few specimens at Weybridge on birch (*Betula verrucosa*). M. Lethierry has seen the insect, and determined it to be his species.

Species 10. *Psylla pruni.*

*Chermes Pruni*, Scop. Ent. Car. 140, 14; *Psylla fumipennis* and *Pruni*, Först. Verh. Ver. Rheinl. v. 76, 22, and 77, 23; Flor, Kennt. Rhyn. 40, 8.

Dark red, somewhat dusky. *Face:* lobes shorter than the crown down the centre; base broad, exterior margin sloping to the somewhat narrow apex more rapidly than the inner one, divergence moderate. *Antennæ* short, brownish-yellow; 5—6 joints at the apex very narrowly black, 9—10 black. *Elytra* semitransparent, brown, external basal cell pale; costal stigma wide, long, gradually tapering from the base to the apex.

*Head* dark red. *Crown:* posterior margin slightly concave. *Face:* lobes dark red, shorter than the crown down the centre; base broad, exterior margin sloping to the somewhat narrow apex more rapidly than the inner one, divergence moderate. *Antennæ* short, brownish-yellow, reaching to or a little beyond the middle of the external basal cell, 5—6 joints at the apex very narrowly black, 9—10 black; 4th about three-fourths the length of the 3rd.

*Thorax: pro-* and *meso-notum* dark red, somewhat dusky. *Elytra* semitransparent, brown, external basal cell pale; nerves stout; costal stigma wide, long, gradually tapering from the base to the apex. *Legs* brownish-yellow. *Thighs* black, apex brownish-yellow. *Tibiæ* brownish-yellow, apex sometimes darker.

*Abdomen* black, side margins narrowly red.

Length 1¼ line barely.

Apparently a very scarce species, as I have only seen a specimen taken by Dr. Power at Esher, May 19th. It is said by Förster to live on the black thorn (*Prunus spinosa*).

Species 11. *Psylla Löwii.*

Red or somewhat brownish-red, generally with pale streaks on the mesonotum. *Face:* lobes as long as the crown down the centre; base broad, rapidly narrowing to the middle, from thence to the apex almost parallel, where they become somewhat divergent. *Antennæ* short, barely reaching to the base of the stigma. *Elytra* smoky testaceous, or almost clear, transparent; nerves, in fresh examples, yellow, inclining to orange, in others dark brown; stigma moderate, almost regularly narrowed from the base to the apex; upper arm of the cubitus long, very convex.

*Head: crown* red, posterior margin distinctly concave. *Face:* lobes reddish or yellowish; base broad, rapidly narrowing to the middle, from thence to the apex almost parallel; apex rounded or slightly acute, somewhat divergent. *Antennæ* reddish-yellow, short, barely reaching to the base of the stigma; 3rd joint short, scarcely longer than the 1st and 2nd together; 4th about four-fifths of the 3rd; 1st frequently black, or base of 1—2 black; 4—8 at the apex narrowly brown; 9—10 black.

*Thorax: pronotum* generally yellowish; *mesonotum* red or brownish-red; in the latter case the posterior portion with four slightly indistinct pale longitudinal lines, the two exterior curving round and enclosing the inner, which are on each side of the centre. *Elytra* smoky testaceous, or almost clear, transparent; greatest breadth before the apex of the stigma, length equal to about two and a half times the breadth; nerves yellow, inclining to orange or dark brown; stigma moderate, almost regularly narrowed from the base to the apex; upper arm of the cubitus long, twice the length of the bifurcation, very convex and approaching the base of the radius. *Legs* reddish-yellow. *Thighs:* 3rd pair sometimes brown at the base. *Tibiæ* yellowish. *Tarsi:* apex of the 2nd joint very narrowly and *claws* dark brown.

*Abdomen* above, in both sexes, deep pitchy-brown, shining; posterior margin of the segments very narrowly red, or sometimes the ♀ reddish, with a dark band across the segments; ♂ genitalia pale chestnut; ♀ frequently green.

Length $1\frac{1}{4}$—$1\frac{1}{2}$ line nearly.

Taken abundantly by Mr. Douglas beginning of November, at Addington, on fir and birch, and by Dr. Power in February, at Esher. The latter are, no doubt, overwintered examples.

Species 12. *Psylla cratægicola.*

*Psylla cratægicola*, Först. Verh. Ver. Rheinl. v. 72, 6; Flor, Rhyn. Livl. ii. 474, 12; Leth. Hém. Nord, ed. ii. 91, 14.

Green or pale yellow, or yellow and green irregularly intermixed. *Face:* lobes somewhat elongate, stoutish at the base, and narrowing gradually to the slightly stumpy apex; length about equal to the crown down the centre. *Pro-* and *meso-notum* yellow, or intermixed with green. *Elytra* clear, transparent, glassy; costal stigma distinct, whitish.

*Head: crown* pale green or yellow, posterior margin gently concave. *Face:* lobes generally pale green, somewhat elongate, proportionately stout at the base, and tapering gradually to the slightly stumpy apex, where they somewhat diverge; length about equal to the crown down the centre. *Antennæ* yellow, reaching almost to the base of the stigma; two last joints always, and sometimes the apex of the 7th and 8th, black; 4th about three-fourths the length of the 3rd.

*Thorax: pro-* and *meso-notum* yellow, or the latter with the anterior portion more or less green, and the posterior portion with a broad green space down the centre. *Elytra* clear, transparent, glassy; nerves fine, pale yellow; costal stigma distinct, whitish. *Legs* pale green or yellowish-green; *claws* frequently dark brown or black.

*Abdomen* greenish or yellowish.

Length $1\frac{1}{2}$ line.

A very delicate species, and somewhat resembling pale specimens of *P. salicicola*, to which it is related, but the different form of the face-lobes, colouring of the antennæ, and want of the dark streak at the apex of the clavus, will at once separate them.

Very common in May and June on hawthorn (*Cratægus oxyacantha*).

Species 13. *Psylla mali.*

*Psylla Mali*, Först. Verh. Ver. Rheinl. v. 72, 8; Flor, Rhyn. Livl. ii. 476, 13; Leth. Hém. Nord, ed. ii. 91, 16; *Psylla rubida*, Meyer, Mitth. schw. ent. Ges. iii. 393.

Green, yellow, red or brown-red. *Face:* lobes somewhat long, divergent at the apex, about as long as the

crown down the centre; base broad, sides sloping to the middle; from thence to the apex gently inclined. *Antennæ* yellow; 9—10 joints black, or sometimes the last four dark brown. *Elytra* transparent, very faintly testaceous; nerves pale; costal stigma widish at the base, and terminating about in a line with the apex of the upper arm of the cubitus.

*Head: crown*, posterior margin slightly concave. *Face:* lobes somewhat long, divergent at the apex, about as long as the crown down the centre; base broad, sides sloping to the middle, from thence to the stumpy or slightly rounded apex gently inclined, inner margin somewhat straight. *Antennæ* yellow, reaching to about the base of the radius; 9—10 joints black, or sometimes the last four dark brown, 4th about two-thirds the length of the third.

*Thorax: pro-* and *meso-notum* green, yellow, red or brown-red, sometimes the latter, with very indistinct indications of pale longitudinal lines. *Elytra* transparent, with a very faint testaceous tinge; nerves pale, varying slightly in depth of colour, according to that of the individual; costal stigma widish at the base, and terminating about in a line with the apex of the upper arm of the cubitus. *Legs* yellow; in dark coloured examples sometimes the thighs brownish; *tibiæ*, apex and *tarsi* brown.

*Abdomen* above green or red, or brown-red; in the latter case generally the posterior margins of the segments pale, sometimes the entire abdomen black.

Length $1\frac{1}{4}$ line.

The var. *rubida*, Meyer-Dür, somewhat resembles *P. salicicola*, but it is smaller in size than the last-named, which has, in addition to the differences in the antennæ and frontal lobes, a short dark streak at the apex of the clavus.

Not uncommon from June to the end of August on various trees; amongst others I have taken it on birch and whitethorn.

### Species 14. *Psylla viridissima.*

Bright green. *Face:* lobes longer than the crown down the centre; base broadish; apex somewhat acute; outer margin concave; divergence at the apex about equal to the base of either. *Elytra* clear, transparent, $2\frac{1}{2}$ times as long as broad; nerves fine; costal stigma moderate.

*Head* bright green. *Crown:* posterior margin concave. *Ocelli* reddish or orange red. *Face:* lobes bright green,

longer than the crown down the centre; base broadish; apex somewhat acute; outer margin concave; divergence at the apex about equal to the base of either. *Antennæ* somewhat brownish; 1—2 joints green, or the latter yellow, 9—10 black.

*Thorax: pro-* and *meso-notum* green; after death more or less yellow. *Elytra* clear, transparent, at least 2½ times as long as broad; greatest breadth beyond the middle; nerves fine, white or slightly clouded towards the apex; costal stigma pale green, changing to whitish after death, wide at the base, and gradually tapering to the apex, which is a little beyond, in a line with the apex of the upper arm of the cubitus; radius concave in the middle, at which point it is slightly nearest to the stigma. *Legs* green. *Claws* brownish.

*Abdomen* bright green.

Length 1½ line.

This species belongs to the same group as *P. mali* and *P. fraxinicola*. It is larger than the first of these species, and about the size of the latter, and may at once be distinguished from either by its bright green colour. A few specimens have been taken by Mr. Douglas on the common buckthorn (*Rhamnus catharticus*) or apple (he is not certain which), at Lee, in September; probably a form of *P. mali*.

Species 15. *Psylla fraxinicola*.

*Psylla fraxinicola*, Först. Verh. Ver. Rheinl. v. 76, 20; Leth. Hém. Nord, ed. ii. 89, 5; *Psylla unicolor*, Flor, Rhyn. Livl. ii. 479, 15.

Green or yellowish. *Face:* lobes shorter than the crown down the centre, exterior margin sloping rapidly to the stumpy apex. *Antennæ* yellow, 3—8 joints at the apex narrowly dark brown, 9—10 dark brown. *Elytra* clear, transparent; apex almost imperceptibly fuscous; nerves brownish-yellow towards the apex; petiole of the cubitus and the lower arm subequal or nearly so; costal stigma long, wide at the base, diminishing gradually to the apex.

*Head* green or yellow. *Crown:* posterior margin almost straight. *Face:* lobes shorter than the crown down the centre, exterior margin sloping rapidly to the stumpy apex. *Antennæ* yellow, 3—8 joints at the apex narrowly dark brown, 9—10 dark brown or black, sometimes from the 4th to the apex dusky; 4th and 5th together a little longer than the 3rd.

*Thorax: pro-* and *meso-notum* green or yellow, without paler longitudinal lines. *Elytra* clear, transparent; apex almost imperceptibly fuscous; nerves from the base to the apex of the petiole yellow, from thence to the apex brownish-yellow; petiole of the cubitus and the lower arm subequal or nearly so. Costal stigma sometimes greenish, long, wide at the base, diminishing gradually to the apex. *Legs* yellow. *Claws* frequently brown.

*Abdomen* entirely green or yellow.

Length 1½ line.

A good character for the identification of this from other green species, as pointed out by Förster, is the shortness of the lower arm of the cubitus, which is only a little longer than the petiole. I have met with this species in the Isle of Wight in July, and in this neighbourhood, on ash trees (*Fraxinus excelsior*), in August and September, but not commonly. M. Lethierry says he finds it on elm. Dr. Power has taken it at Balmuto (Fifeshire).

Species 16. *Psylla fraxini.*

*Chermes Fraxini*, Lin. F. S. 264, 1013; S. N. ii. 739, 15; Fab. E. S. iv. 223, 15; S. R. 305, 15; Scop. Ent. Carn. 140, 415; *Psylla Fraxini*, Curt, B. E. xii. 565 and pl.; Först. Verh. Ver. Rheinl. v. 80, 31; Flor, Rhyn. Livl. ii. 481, 16; Leth. Hém. Nord, ed. ii. 89, 5.

Yellow, or sometimes slightly orange. *Head* and *mesonotum* with black patches and streaks. *Face:* lobes much shorter than the crown down the centre, in outline somewhat pyramidal. *Antennæ* yellow, 4—6 joints black at the apex, 7—10 black. *Elytra* clear, transparent; nerves and costal stigma yellow, except when intercepted by the fuscous black-markings.

*Head: crown* generally black, side margins yellow or orange, posterior margin lightly concave. *Face:* lobes frequently black, much shorter than the crown down the middle; in outline somewhat pyramidal. *Antennæ:* yellow, reaching to beyond the base of the stigma, 4—6 joints black at the apex, 7—10 black, 4th about half as long as the third.

*Thorax: pronotum* pale yellow; *mesonotum* yellow or orange; anterior portion with two black triangular patches in front, and a somewhat square spot on the sides posteriorly, in the channel; posterior portion with four longitudinal, broad, black streaks, not unfrequently joined

in front and forming a ∩-shaped character. *Elytra* clear, transparent; nerves fine, pale yellow, except where they are intercepted by the fuscous-black markings, when they become black; costal stigma moderate, its inner nerve very finely margined with black exteriorly; dorsal margin at the base with a short black streak, from thence to the apex of the clavus yellow, nerve adjoining the latter margined with fuscous-black on each side; round the apex a broad, irregular fuscous-black band, frequently more or less interrupted or entirely wanting. *Wings* clear, transparent; dorsal margin at the base fuscous-black. *Legs* yellow. *Thighs* with a black line along the upper margin. *Tarsi*: 2nd joint at the apex and *claws* black.

*Abdomen* black; posterior margin of the segments more or less broadly yellow.

Length 1½ line.

Unlike any other species known to me in its markings.

A common species on ash-trees (*Fraxinus excelsior*) from June to September.

Species 17. *Psylla ferruginea.*

*Psylla ferruginea*, Först. Verh. Ver. Rheinl. v. 79, 29.

Reddish or pale brownish-red, with dark red-brown streaks on the mesonotum. *Face:* lobes nearly as long as the crown down the centre; base broad, exterior and inner margin sloping to the somewhat stumpy apex, where the divergence is about equal to half the base of either of them. *Antennæ* yellow; 4—7 joints black at the apex, 8th obscure, 9—10 black. *Elytra* clear, transparent, nerves and costal stigma clear chocolate-brown; apex of the nerves and the spaces enclosed by them on the pale dorsal margin to round the apex with dark-brown spots.

*Head* reddish. *Crown:* posterior margin concave. *Face:* lobes dark red, nearly as long as the head, sparingly clothed with pale hairs, base broad, exterior and inner margin sloping to the somewhat stumpy apex, the latter when seen from the side is more acuminate; divergence at the apex about equal to half the base of either of them. *Antennæ* yellow, reaching to the base of the stigma; 4—7 joints black at the apex, 8th obscure, 9—10 black, 4th about two-thirds the length of the 3rd.

*Thorax: pro-* and *meso-notum* pale brownish-red; posterior portion of the latter with four dark red-brown, longitudinal streaks, the two interior somewhat oval in shape. *Elytra* clear, transparent, nerves and costal stigma gene-

rally clear chocolate-brown, sometimes the costal marginal nerve and stigma pale red or rose-pink; dorsal margin from the base to the apex of the clavus brown, terminating in a short black streak, from thence to round the apex yellowish-white; nerve adjoining the apex of the clavus margined with brown on both sides; apex of the other nerves and an elongate spot in the spaces enclosed by them on the marginal nerve pitchy brown. *Wings* clear, transparent; costal margin dark fuscous. *Legs* reddish or reddish-brown. *Thighs:* 1st and 2nd pairs brown at the base, 3rd entirely dark brown. *Tibiæ* reddish, slightly darker at the apex. *Tarsi* pale red. *Claws* brown.

*Abdomen* above black; posterior margin of the segments narrowly and sides broadly bright red.

Length $1\frac{1}{2}$ line.

The only species with which the above can be confounded is *P. costatopunctata*, which it resembles very much in the markings along the dorsal margin of the elytra. The last-named, however, is narrower, paler and has different formed face-lobes. Dr. Puton, in the Ann. Soc. Fr. for 1871, p. 437, refers *P. pyrisuga*, Först. to this species as being only a variety. This appears to me to be a decided mistake, as Förster does not make mention in his description of any spots on the dorsal margin of that species; he simply says: "Die Flügel ziemlich wasserhell, mit röthlichem Stigma und ähnlich gefärbten Adern," and specimens I have from Meyer-Dür fully bear this out.

It would appear to be rare with us, as I have only seen a single example taken by Dr. Power at Cowfold (Sussex) in May, another by Mr. B. Cooke, and two others by Mr. Douglas, beginning of November, on beech (*Fagus sylvatica*).

### Species 18. *Psylla costatopunctata.*

*Psylla costatopunctata*, Forst. Verh. Ver. Rheinl. v. 76, 20.

Reddish-yellow, with pale yellowish-white streaks. *Face:* lobes slightly clothed with pale hairs; shorter than the crown down the centre, base broad, exterior margin sloping to the bluntly-rounded apex, inner margin straight. *Antennæ* yellow; 4—8 joints at the apex black, 9—10 black. *Elytra* somewhat clear and transparent, nerves pale yellow; costal stigma yellow, wide and long; apex of the clavus and adjoining nerve with a black dash, apex

of the other nerves and the spaces between with a black spot.

*Head* reddish-yellow. *Crown:* posterior margin somewhat deeply concave, margins of the central channel and a space round the ocelli pale yellowish-white. *Face:* lobes entirely pale yellowish-white, or the apex reddish-yellow, shorter than the crown down the centre, and slightly divergent at the apex; base broad; exterior margin sloping to the bluntly-rounded apex, inner margin straight. *Antennæ* yellow, reaching beyond the base of the stigma; 3rd joint faintly, 4—8 distinctly black at the apex, 9—10 black; 4—6 of almost equal length, and each a little shorter than the 3rd.

*Thorax: pronotum* pale yellowish-white, with a small reddish-yellow spot on each side behind the ocelli; *mesonotum* reddish-yellow; anterior portion with a longitudinal central line, posterior margin and a transverse line before the same pale yellowish-white; posterior portion with a broadish longitudinal line on each side of the centre, a finer curved one exterior, and the lateral margins pale yellowish-white; the curved lines appear to form a circle enclosing two I-shaped characters. *Elytra* somewhat clear and transparent, nerves pale yellow; costal stigma yellow, wide and long; apex of the clavus and the adjoining nerve with a broad black dash; apex of the remaining nerves with a small black spot, and alternating with these are four short, black streaks proceeding from the marginal nerve. *Legs* yellow, or faintly reddish-yellow. *Tarsi:* 2nd joint at the apex narrowly and *claws* brown.

*Abdomen* above in the ♀ red, down the centre broadly dark brown, sides broadly pale yellowish-white.

Length 1½ line.

I met with two ♀ examples, in July and September, 1862, which I suppose must have been captured by sweeping. Dr. Power has also taken a single specimen at Mickleham in October. Förster records having received it from the late Mr. Walker, and there is a specimen in the British Museum confirming this statement.

### Species 19. *Psylla rhamnicola.*

Red or orange red with red-brown streaks on the mesonotum. *Face:* lobes as long as or a little longer than the crown down the centre; base broad; exterior margin sloping rapidly for two-thirds its length, inner margin

sloping gently; from thence to the apex knoblike; divergence about equal to one-half the base of either of them. *Antennæ* yellow; 4—5 at the apex broadly black, 6—10 black. *Elytra* clear, transparent; nerves somewhat brownish-yellow, or frequently rose-pink; apex darker; costal stigma wide, long.

*Head: crown* red or orange; apex narrowly pale yellowish-white; posterior margin concave. *Face:* lobes yellowish-white or white, sparingly clothed with pale hairs; exterior margin sloping rapidly for two-thirds its length; inner margin sloping gently for the same distance; from thence to the apex knoblike, white; round the base of the contraction is a fuscous ring. *Antennæ* yellow, reaching to the base of the stigma; 4—5 broadly black at the apex, 6—10 black; 4th three-fourths the length of the 3rd.

*Thorax: pronotum* pale yellow or yellowish-white, frequently with a fine, more or less interrupted, red line across the middle; *mesonotum* red or orange; anterior portion with a more or less distinct pale central line; posterior portion with four broad, longitudinal, red-brown streaks narrowly margined with pale yellowish-white. *Elytra* clear, transparent; nerves somewhat brownish-yellow or rose-pink as far as the bifurcation of the arms of the cubitus, from thence to the apex darker; costal stigma wide, long; dorsal margin at the base brownish-yellow, prolonged into a black streak which terminates at the apex of the clavus; within the spaces enclosed by the nerves and adjoining the apical margin is a small, almost obsolete fuscous-stain. *Legs* yellow. *Tarsi* and *claws:* 1st and 2nd pairs fuscous-brown; 3rd, second joint only and claws fuscous-brown.

*Abdomen* above more or less red or orange, with a broad dark streak down the middle in some examples; ♂ genital segments greenish-yellow; plate above brownish; processes yellow; apex narrowly brown.

Length $1\frac{3}{4}$ line.

This species belongs to the group in which are *P. costatopunctata* and *P. ferruginea*, but it is larger than either of these species, has different formed face-lobes and genitalia, as also much less defined markings round the apex of the elytra.

The only specimens I have seen were taken by Mr. Douglas and myself on the common buckthorn (*Rhamnus catharticus*), at Sanderstead, in August.

Species 20. *Psylla visci.*

*Psylla Visci*, Curt. B. E. xii. 565, 5*a*; Först. Verh. Ver. Rheinl. v. 71, 4?

"Breadth $2\frac{2}{3}$ lines: pale green, becoming ochreous after death; antennæ as long as the body, black at the apex, each joint, excepting the two basal ones, tipped with the same colour; superior wings slightly tinged with brown, with a darker undefined spot on the inferior margin."

"This I bred in the middle of May from pupæ found on the mistletoe at Rougham by Mr. Ralph Bennet."

Genus Spanioneura, Först.*

*Head* vertical. *Crown* without the eyes pentagonal, with a central longitudinal channel and a fovea on each side; about twice as broad as the length down the centre; two anterior sides slightly convex. *Face:* lobes long, stout, conic, scarcely diverging at the apex. *Antennæ* short, 10-jointed; 1—2 joints short, stout; remainder filiform, very fine; 3—4 almost of equal length. *Ocelli* three, placed as in the other genera.

*Thorax: pronotum* narrow, deflected, with a fovea on each side near the lateral margin; *mesonotum* as in the other genera. *Elytra* lanceolate, radius terminating in the apex; costal stigma distinct, widest at the mouth and suddenly narrowed; dorsal margin without nervelets.

Species 1. *Spanioneura Fonscolombei.**

*Spanioneura Fonscolombii*, Först. Verh. Ver. Rheinl. v. 94.

Pale green or reddish-yellow. *Face:* lobes long, conical, very finely clothed with short pale hairs. *Elytra* lanceolate, transparent, with four small black granules on the dorsal margin in the spaces enclosed by the nerves; cubitus petiolate.

*Head* pale green or reddish-yellow. *Crown* pentagonal. *Ocelli* placed as in the other genera. *Antennæ* yellowish, slightly browner towards the apex; 10th joint brown. *Eyes* reddish-brown.

*Thorax: pro-* and *meso-notum* pale green or reddish-yellow; the former narrow, deflected, with a fovea on each side near the lateral margin. *Elytra* clear, transparent;

* Not yet known to be British.

nerves pale greenish or yellowish; dorsal margin with four small black granules in the spaces enclosed by the nerves. *Legs* pale green.

*Abdomen* green.

Length $1\frac{1}{4}$ line.

This genus seems to unite *Psylla* with *Trioza*, but differs from both in the shortness and fineness of the antennæ and the length of the face-lobes. Like *Psylla* it has a costal stigma, but the elytra are shaped like those of *Trioza*, from which genus it also differs in having the cubitus petiolate and the nervelets replaced by small granules on the dorsal margin. Förster says there are only three, but my specimens distinctly have four. Baron de Fonscolombe, who gave to Förster the insects from which his description is made, says he believes he obtained them from box (*Buxus sempervirens*), and also from other plants near Aix. Förster throws doubt upon the box theory, and perhaps correctly; but if the insect was found at Aix, I see no reason against its occurrence here.

The specimens which I possess were kindly presented to me by M. Lethierry, and are from St. Girons (Ariége), a department of France bordering on the Pyrenees.

## Genus Trioza, Först.

*Head* broader than long. *Crown* considerably deflected, divided down the centre by a channel and with a fovea on each side between the eyes; the space between the former and the latter slightly raised; anterior margin more or less M-shaped; posterior margin more or less concave. *Ocelli* placed as in *Psylla*. *Face* lobate; lobes moderately long, generally triangular in outline, acute at the apex where the divergence is great. *Antennæ* 10-jointed, formed as in *Psylla*, but shorter.

*Thorax: pronotum* very narrow, collar-shaped, deflected; sides with a depression causing the lateral margins to become more or less lobate. *Mesonotum* and *scutellum* as in *Psylla*. *Elytra* generally transparent, lanceolate, more or less acute at the apex; costal margin convex, without a stigma; spaces enclosed by the nerves along the dorsal margin with three nervelets; upper branch of the upper arm of the cubitus terminating almost in the apex; cubitus not petiolate.

The lanceolate form of the elytra with the three nerve-

lets, the cubitus without a petiole, and the short antennæ, sufficiently indicate the difference between this genus and that of *Psylla*.

Species 1. *Trioza Walkeri*.

*Trioza Walkeri*, Först. Verh. Ver. Rheinl. v. 88, 23; Flor, Rhyn. Livl. ii. 496, 1.

Long and narrow, entirely brown, or more frequently with a more or less interrupted white band across the middle of the elytra, and before the apex a somewhat triangular white patch.

*Head* pale or dark brown, clothed with short, semi-erect pale hairs. *Crown* less deflected than ordinary. *Face:* lobes dark brown, not so long as the crown down the centre; base broad; apex stumpy; exterior margin convex, only slightly divergent at the apex. *Antennæ* yellow; 1st joint entirely, 2nd at the base dark brown; 4th and 6th, apex narrowly black; 9—10, or sometimes 8—10, black, 4th about three-fourths the length of the 3rd.

*Thorax: pronotum* generally pale brown; *mesonotum* dark brown, clothed with short, semi-erect, pale hairs; anterior portion generally with a central longitudinal line, and the lateral margins pale; posterior portion with four pale longitudinal lines, placed one on each side of the centre, somewhat broad, and one narrower, a little more remote. *Elytra* brown, semi-transparent, wrinkled transversely, and thickly powdered with dark-brown atoms; across the middle a more or less interrupted irregular white band, very broad on the costal margin, sometimes almost obsolete between the radius and cubitus, but always distinct between the nerves adjoining the apex of the clavus, sometimes the entire elytra are brown; costal margin very convex from the base to almost the apex of the radius, where it is suddenly cut off obliquely to the acute apex, before which is a somewhat triangular white patch. *Legs* yellow. *Thighs* generally dark brown at the base. *Tarsi:* 2nd joint sometimes at the apex red. *Claws* brown.

*Abdomen* above black; posterior margin of the segments very narrowly and sides red.

Length $1\frac{3}{4}$—2 lines.

The colour and peculiar manner in which the costal margin is cut off towards the apex is sufficient to separate the above from all other species.

Taken by Mr. Douglas and myself somewhat abundantly on blackthorn (*Prunus spinosus*), on Mickleham Downs in August, and by Dr. Power on the spindle tree (*Euonymus europæus*), near Addington, in October. Dr. Flor has taken it on the common buckthorn (*Rhamnus catharticus*).

In the collection of Mr. B. Cooke are two ♀ examples of a remarkable variety of this species, in which the elytra are entirely pale, almost white, with only a few fuscous atoms scattered across the middle of the disk, and for which I propose the name *albipennis*. They were taken by him at the same time and place as the others.

Species 2. *Trioza urticæ*.

*Chermes Urticæ*, Lin. F. S. 263, 1006; S. N. ii. 738, 8; De Geer, Mém. iii. 87, 1, t. 9, fig. 17—26, and t. 10, fig. 1—7; Zett. I. L. 308, 4; *Psylla Urticæ*, Burm. Handb. ii. 98, 3; *Psylla eupoda*, Hartig, Zeits. iii. 374, 8; *Trioza Urticæ, eupoda, protensa* and *forcipata*, Först. Verh. Ver. Rheinl. v. 82, 1, 3, 4 and 84, 10; *Trioza Urticæ*, Flor, Rhyn. Livl. ii. 505, 7; *Trioza bicolor*, Meyer, Mitth. schw. ent. Ges. iii. 391.

Fuscous-yellow, yellow, orange, red or black, with brown or black streaks on the mesonotum in the first and third forms. *Face:* lobes black; base more or less broadly pale, longer than the crown down the centre. *Elytra* somewhat elongate, clear, transparent or sometimes very faintly testaceous; apex obtuse; nerves pale yellow; distance of the radius at its base from the costal nerve about equal to that from the cubitus.

*Head: crown* yellow or dark brown; in the latter case generally with the anterior margin pale or fuscous-yellow; posterior margin almost straight. *Face:* lobes black, base more or less broadly yellow, rarely entirely black, or sometimes yellow with the apex black, longer than the crown down the centre, acuminate, considerably divergent at the apex. *Antennæ* black; 2—3 joints white, 4th brownish, base white; 4th barely half the length of the 3rd.

*Thorax: pronotum* fuscous-yellow or yellow; *mesonotum* fuscous-yellow, yellow, orange, red or black; in the last case with the sides broadly red; in the 1st and 3rd with four brown or black longitudinal streaks on the

posterior portion, placed one in a line with each extremity of the scutelliform process, and another generally broader than the last nearer the lateral margin. *Elytra* somewhat elongate, clear, transparent, or sometimes very faintly testaceous; apex obtuse or sometimes bluntly rounded; nerves pale yellow; radius at the base about equidistant from the costal margin and the cubitus, its apical half slightly convex towards the anterior margin. *Legs* fuscous-yellow. *Thighs* yellow, with a broad black longitudinal line somewhat on the inside, near the upper margin, generally extending to the apex. *Tibiæ:* apex frequently brown. *Tarsi* and *claws* pitchy brown.

*Abdomen* above brown or black, posterior margin of the segments narrowly greenish or yellowish-green; beneath generally green.

Length 1¼—1½ line.

Var. *bicolor*, Meyer-Dür. *Head* and *thorax* deep yellow. *Abdomen* green; all the other characters as above. Types in my possession.

Allied to *T. albiventris*, from which it may be recognized by the difference in colour and divergence of the face-lobes, and more particularly by the radius, which is almost one-half further distant from the costal nerve.

Perhaps the most common and variable species of the genus, and may be swept from nettles (*Urtica dioica, &c.*) from May to October.

Species 3. *Trioza viridula.*

*Chermes viridula*, Zett. I. L. 309, 7; *Psylla simplex*, Hartig, Zeits. iii. 374, 6? *Trioza apicalis*, Först. Verh. Ver. Rheinl. v. 82, 2; *Trioza viridula*, Flor, Rhyn. Livl. ii. 499, 3.

Pale green. *Elytra* clear, with a glassy or crystalline transparence.

*Head* pale green. *Face:* lobes at the apex brown or black, shorter than the crown down the centre, moderately divergent; apex acuminate. *Antennæ* whitish or yellowish-white; apex of the 8th joint and 9—10 entirely black; 3rd twice as long as the 4th.

*Thorax* pale green. *Elytra* clear, with a glassy or crystal transparence; costal margin convex, somewhat abruptly curved from and at the greatest breadth of the corium, which lies a little before the apex of the radius, to the stumpy, almost acute apex; nerves clear. *Legs* pale

green or greenish-yellow. *Tarsi:* 2nd joint entirely, or apex only, and *claws* brown.

*Abdomen* pale green.

Length 1½ line.

The delicacy and transparency of this species will separate it from all others.

Flor says that it is not uncommon with him from June to October, upon the spruce fir (*Pinus abies*). I have only met with two examples; one in the August of this year, amongst rubbish at the bottom of a hedge, and the other in September, 1869, in the Sallow Pit, Lee.

Species 4. *Trioza galii.*

*Trioza Galii*, Först. Verh. Ver. Rheinl. v. 87, 19; Flor, Rhyn. Livl. ii. 511, 9; Leth. Hém. Nord, ed. ii. 92, 2; *Trioza velutina*, Först. Verh. Ver. Rheinl. v. 87, 20?; Flor, Rhyn. Livl. ii. 513, 10?; Leth. Hém. Nord, ed. ii. 92, 2?; *Trioza thoracica*, Flor, Rhyn. Livl. ii. 514.

Black, shining. *Face:* lobes short, outline somewhat pyramidal. *Antennæ* black; 2nd joint at the apex and 3rd entirely white. *Elytra* very pale brownish-testaceous, transparent; apex not acuminate.

*Head* black, shining. *Face:* lobes not so long as the crown down the centre; base broad; outline somewhat pyramidal. *Antennæ* black; 2nd joint at the apex and 3rd entirely white; 4th not half as long as the third.

*Thorax: pro-* and *meso-notum* black, shining; the latter at the insertion of the elytra brownish-yellow. *Elytra* very pale, brownish-testaceous, transparent, a little more than twice as long as broad; apex not acuminate; dorsal margin and *wings* at the base with a small black dash. *Legs* black. *Thighs:* apex brownish-yellow. *Tibiæ* white, base entirely fuscous, apex slightly brownish. *Tarsi:* 2nd joint at the apex and *claws* fuscous.

*Abdomen* black; base reddish; posterior margin of the segments very narrowly red.

Length 1¼ line nearly.

After carefully reading and comparing the description of *T. galii* and *velutina*, as set forth both by Förster and Flor, I have come to the conclusion that the differences are more imaginary than real, and I have therefore ranked them as one species only, until I have examined more specimens.

Haliday had collected this species in Ireland, as men-

tioned by Förster; and the only specimens of recent capture I have seen are one taken by Dr. Power at Darenth, in June, another at Lee, in August, and a third by Mr. Douglas. According to Haliday, he found *T. galii* on the yellow ladies' bed-straw (*Galium verum*); and Lethierry says he takes *T. velutina* very commonly upon the same plant in August and September.

Species 5. *Trioza acutipennis.*

*Chermes acutipennis*, Zett. I. L. 308, 5; *Trioza acutipennis*, Flor, Rhyn. Livl. ii. 516, 12; *nec* Först. *Trioza Saundersi*, Meyer, Mitth. schw. ent. Ges. ii. 390.

Black. *Face:* lobes black, somewhat broad at the base, not longer than the crown down the centre. *Antennæ* yellowish-white; 1—2 joints black, 4th, 6th and 8th narrowly brown at the apex, 9—10 black. *Elytra* pale brownish-testaceous, transparent; apex acute; nerves pale.

*Head* black, shining. *Crown:* posterior margin straight. *Face:* lobes black, somewhat broad at the base, not longer than the crown down the centre; exterior and inner margins gradually sloping to the somewhat acute apex, where the divergence is less than the base of either of them. *Antennæ* yellowish-white, 1—2 joints black, 4th, 6th and 8th narrowly brown at the apex, 9—10 black; 4th about $\frac{3}{4}$ the length of the 3rd, apex slightly thicker than the base of the 5th.

*Thorax: pronotum* black; lobate side margins yellow; *mesonotum* black; at the base of the elytra red. *Elytra* pale brownish-testaceous, transparent; apex acute; nerves pale; radius straight, or very slightly bent before the apex; *pro-* and *meso-sternum* black; *metasternum* generally red. *Legs* yellow or brownish-yellow. *Thighs* pitchy black; apex yellow or brownish-yellow. *Tarsi:* 2nd joint more or less dark brown. *Claws* dark brown.

*Abdomen* above black; ♂ genital segments pale brownish-yellow.

Length $1\frac{1}{4}$ line.

I have hesitated to refer the *T. acutipennis*, Först., to this species, as the differences he points out in the antennæ and elytra are so much at variance with that of Zetterstedt. There is no doubt, however, but that the *T. Saundersi*, Meyer-Dür, belongs here, as I possess the specimens which he sent to Mr. Saunders, with his own label attached.

I have only seen a few specimens, although on the Continent it is said to be common in damp places from May to October.

### Species 6. *Trioza hæmatodes.*

*Trioza hæmatodes*, Först. Verh. Ver. Rheinl. v. 85, 13; Leth. Hém. Nord, ed. ii. 93, 5.

Elongate, brown-red, with paler streaks upon the mesonotum. *Face:* lobes brownish-yellow. *Antennæ* black; 1st and 2nd joints brown, 3rd yellow. *Elytra* clear, transparent; nerves pale brown; radius short, space enclosed between it and the costal nerve lanceolate.

*Head: crown* orange reddish. *Face:* lobes brownish-yellow, as long as the crown down the centre; base moderate; inner margin diverging from about the middle to the somewhat acute apex. *Antennæ* black; 1st and 2nd joints brown, 3rd yellow, 4th not ½ the length of the 3rd.

*Thorax: pronotum* pale; *mesonotum* brown-red, posterior portion with four somewhat brownish-yellow longitudinal streaks; scutelliform appendage yellow, with a faint reddish hue. *Elytra* elongate, clear, transparent, nerves pale brown; costal and dorsal margin almost equally rounded towards the somewhat acute apex; radius short, about equal in length to the costal margin of the basal cell; enclosed space lanceolate. *Legs* slightly dusky yellow. *Thighs* with a dark streak along the inside near to the upper margin. *Tarsi:* 1st joint dusky, 2nd and *claws* black.

*Abdomen* above brown; posterior margin of the segments narrowly paler; beneath yellowish, ♂ genital segments and processes yellow, apex of the latter narrowly brown.

Length 1½ line.

Somewhat resembling *T. Urticæ* in some points, but differing from that species in the shape of the elytra, the short, almost straight radius and enclosed lanceolate space, and as also frequently having a slight fuscous shade along the dorsal margin before the apex of the clavus.

The insects ticketed *T. forcipata* by Meyer-Dür, which are in my possession, belong to the above species.

Taken both by Dr. Power and Mr. Douglas: by the latter at Addington, end of October, on fir, and by the former in February at Esher.

Species 7. *Trioza salicivora.*

*Trioza salicivora*, Reuter (MS.).

Orange red. *Elytra* clear, pale brownish-testaceous, transparent; costal margin curved somewhat regularly from beyond the external basal cell to the somewhat acute apex.

*Head: crown* orange red. *Face:* lobes orange yellow, scarcely as long as the crown down the centre; base broad; apex somewhat acuminate; divergence about equal to $\frac{2}{3}$ of the base of either. *Antennæ* white; 1st and 2nd joints somewhat fuscous at the base, 3rd and 4th slightly clavate; apex narrowly brown; 8—10 black, 4th about $\frac{3}{4}$ the length of the 3rd.

*Thorax* orange red. *Elytra* clear, pale brownish-testaceous, transparent; costal margin curved somewhat regularly from beyond the external basal cell to the somewhat acute apex. *Legs* pale orange yellow. *Tarsi:* 2nd joint, apex and *claws* fuscous-black.

*Abdomen*, ♂, above somewhat orange yellow; base orange red.

Length $1\frac{1}{4}$ line.

We have no other British species for which it is likely to be mistaken.

I have only seen a single ♂ example taken by Dr. Power at Balmuto, Fifeshire.

Species 8. *Trioza albiventris.*

*Trioza albiventris*, Först. Verh. Ver. Rheinl. v. 84, 8; Flor, Rhyn. Livl. ii. 503, 6.

Reddish-yellow or yellow-reddish, with two generally ∩-shaped characters on the mesonotum. *Face:* lobes black, longer than the crown down the centre, slightly divergent at the apex. *Elytra* clear, transparent, apex acute; dorsal margin for about $\frac{2}{3}$ its length from the base somewhat moderately and regularly curved, from thence to the apex more abrupt; radius long, apical half curved and running parallel with the costal margin.

*Head: crown* black, margin yellowish-red; posterior margin very slightly concave. *Face* black; *lobes* black, longer than the crown down the centre, regularly tapering from the base to the somewhat acute apex; divergence trifling. *Antennæ* black; 1—3 joints bone white, 4th about half the length of the 3rd.

*Thorax: pronotum* yellow-reddish, with a short, transverse, fine, black line posteriorly next the lateral margin;

*mesonotum* reddish-yellow, or yellowish-red; anterior portion with a large more or less dark red-brown streak on each side, not reaching the posterior margin; posterior portion with two more or less dark red-brown ∩-shaped characters; scutelliform process usually yellowish, with a more or less distinct brown or reddish-brown spot in the middle. *Elytra* clear, transparent, apex acute; dorsal margin for about $\frac{2}{3}$ its length from the base somewhat moderately and regularly curved or slightly flattened in the middle, from thence to the apex more abrupt; radius long, basal half almost straight, from thence curving round towards, and running parallel with, the costal margin, until just before its termination, when it suddenly recurves; nerves at the base white, apical half yellowish or brownish. *Legs* yellow. *Thighs* along the upper margin with a broadish black streak, not reaching to the base. *Tibiæ:* 1st and 2nd pairs fuscous-yellow or dark brown, 3rd pale yellow. *Tarsi:* 1st and 2nd pairs more or less dark brown, 3rd yellow; 2nd joint at the apex frequently brownish.

*Abdomen* above black, beneath pale yellowish-green or green, becoming white or bone white after death.

Length $1\frac{1}{2}$ line.

This insect stands nearer to *T. urticæ* than any other of our at present known to me British species, but differs from it in the colouration of the antennæ, in having entirely black face-lobes, a long and peculiarly-formed radius much nearer to the dorsal margin throughout its entire length than is usual, of itself an excellent distinguishing character, and the abdomen beneath white after death, apart from other differences in the genitalia.

I have only seen a few examples taken by Mr. Douglas at Addington in October, both on fir and birch.

## Genus Aphalara.

*Head* much broader than long. *Crown* considerably deflected, divided down the centre by a channel and with a deep fovea on each side; anterior margin more or less ∩-shaped; posterior margin more or less angulate. *Ocelli* minute, placed as in the other genera, the frontal one not perceptible from above. *Face* without lobes. *Antennæ* 10-jointed, short; 9—10 slightly thickened; all the others as in *Psylla*. *Eyes* placed on the side of the head; inner margin almost parallel with the central channel; outer margin very convex.

*Thorax: pronotum* narrow, more or less deflected or almost horizontal, with two foveæ on each side frequently connected by a channel; lateral margins rounded, almost in a line with the outer margin of the eyes. *Mesonotum* as in *Psylla* and *Trioza*. *Elytra* semi-transparent, rounded at the apex; cubitus petiolate, the petiole about ½ the length of the lower arm; stigma obsolete.

Resembles *Psylla* through having a rounded apex to the elytra and the cubitus petiolate, and *Trioza* through its having no stigma: and it differs from both in the shape of the head and the two slightly thickened terminal joints of the antennæ.

Species 1. *Aphalara exilis.*

*Tettigonia exilis*, Weber et Mohr, Nat. Reise, 65, t. 1, fig. 2 (1804); *Chermes exilis*, Fallén, Hem. Succ. ii. 80; *Aphalara exilis*, Först. Verh. Ver. Rheinl. v. 89, 2; Flor, Rhyn. Livl. ii. 532, 1; Leth. Hém. Nord, ed. ii. 94, 1.

Greyish-yellow, orange or reddish-yellow, with paler streaks on the mesonotum. *Antennæ* pale yellow or sometimes whitish; 1—2 and 9—10 joints black. *Elytra* white, transparent, more or less thickly sprinkled with fuscous or fuscous-black spots, which are more or less confluent; before the apex a broad transverse fuscous-black band more or less interrupted.

*Head: crown* in front on each side of the channel slightly produced into a lobe with rounded top. *Antennæ* pale yellow or sometimes whitish; 1st joint entirely and base of the 2nd black; 9—10 black.

*Thorax: pronotum* pale; *mesonotum* greyish-yellow or reddish-yellow; posterior portion with four pale, more or less distinct in certain individuals, longitudinal lines. *Elytra* white, transparent, with a somewhat frosted appearance when the insect is in repose, more or less thickly sprinkled with fuscous or fuscous-black spots, which are more or less confluent; before the apex a broad transverse fuscous-black band, generally more or less interrupted and spotted with the ground colour; dorsal margin with three fuscous or fuscous-black patches, placed, one a short distance from the base, one a short distance from the apex of the clavus, and the 3rd margining the nerve adjoining the latter; nerves white or yellow. *Legs* yellow. *Thighs* in the middle broadly dark brown or black. *Claws* dark brown.

*Abdomen* black; sides and posterior margin of the segments narrowly yellow; genital segments of both sexes yellow. Length 1 line.

The broad appearance of this species, its white elytra, with the dark atoms and band before the apex, render it unmistakeable.

Flor gives its size as greater than *A. polygoni*, but this is evidently an error. Dr. Power has taken it somewhat commonly at Weybridge from June to October, and I have an old example from Mr. T. Wilkinson, taken near Scarborough.

### Species 2. *Aphalara polygoni.*

*Aphalara polygoni*, Först. Verh. Ver. Rheinl. v. 90, 3; Flor, Rhyn. Livl. ii. 534, 2; Leth. Hém. Nord, ed. ii. 95, 4.

Orange red or reddish-yellow, with pale streaks on the mesonotum. *Antennæ* somewhat dusky yellow; 1st joint entirely, and 2nd at the base, reddish-brown or brown; 9—10 black. *Elytra* pale testaceous or yellowish; apex generally somewhat fuscous; dorsal margin with a short streak before the apex of the clavus, and margin of the adjoining nerve, black.

*Head: crown* red or orange red; margin of the central channel at the base frequently whitish. *Antennæ* somewhat dusky yellow; 1st joint entirely, and 2nd at the base, reddish-brown or brown; 9—10 black.

*Thorax: pronotum* generally pale; frequently with a small red or brownish spot in the middle, and the foveæ brown; *mesonotum* orange red or reddish-yellow; anterior portion with a longitudinal central line, and the sides whitish or yellowish-white; posterior portion with four whitish or yellowish-white longitudinal lines; lateral margin whitish or yellowish-white. *Elytra* pale testaceous or yellowish, apex generally somewhat fuscous; nerves pale or dark brown in certain positions, appearing as though margined with yellowish; dorsal margin, before the apex of the clavus, with a short black streak, and the adjoining nerve margined on both sides with black; sometimes these last characters are obsolete; clavus, apex frequently white. *Legs* pale brownish-yellow or yellow. *Thighs* on the inside, near the upper margin, generally with a brownish or blackish longitudinal streak. *Tarsi:* 2nd joint at the apex fuscous. *Claws* brown.

*Abdomen* dark brown or black; posterior margin of the segments narrowly yellow.

Length 1—1¼ line.

The black streak on the clavus will serve to distinguish this species from either of the other two.

Dr. Power has taken it somewhat commonly on birch, at Birch Wood, in May and June; Mr. Douglas, two or three examples, on fir, in October; and I have also one from Esher. Messrs. Walker and Haliday also met with it, the latter on the sorrel (*Rumex acetosella*). It occurs from May to the end of October.

Species 3. *Aphalara radiata.*

Yellow or yellowish-green, with darker longitudinal streaks on the mesonotum. *Antennæ* yellowish; 1st and 2nd joints, except the apex of the latter, dark brown; 9—10 black. *Elytra* white, almost transparent, about two and a half times as long as broad; nerves yellowish or brownish-yellow; internal basal cell with a fuscous-brown spot in the middle; the four branches of the arms of the cubitus and base and apex of the radius margined with fuscous-brown.

*Head: crown* yellowish or yellowish-green; posterior margin slightly concave. *Antennæ* yellowish; 1st and 2nd joints dark brown, apex of the latter pale; 9—10 black.

*Thorax: pronotum* pale; *mesonotum* yellow or yellowish-green; posterior portion with two broad, longitudinal dark-brown streaks on either side. *Elytra* white, almost transparent, about two and a half times as long as broad; nerves yellowish or brownish-yellow; internal basal cell with a fuscous-brown spot in the middle; base and apex of the radius with a large fuscous-brown spot, the latter divided by a white streak next the costal margin; the four branches of the arms of the cubitus margined with fuscous-brown, widest at the marginal nerve, and joined internally by an irregular transverse fuscous-brown band, thereby giving a somewhat radiated character to the markings; base of the cell between the arms of the cubitus with a fuscous-brown spot. *Legs* yellow. *Claws* brown.

*Abdomen* dark brown or blackish; posterior margin of the segments narrowly yellow; ♂ genital processes yellow; apex black.

Length 1—1⅓ line.

Very similar to *A. nervosa*, Först., but distinguishable

from that species by the spot in the internal basal cell, the irregular transverse band connecting the fuscous-brown margins of the branches of the cubitus, and the spot at the base of the cell of the latter.

As regards the colouring of the pro- and meso-notum, the description may be found hereafter to be defective, because the specimens from which the foregoing has been drawn up are very old, and have been submerged along with the other valuables of the Rev. T. A. Marshall. There are four or five specimens in his collection taken at Cheltenham.

Species 4. *Aphalara picta.*

*Chermes picta*, Zett. I. L. 308, 3 ; *Aphalara flavipennis*, Först. Verh. Ver. Rheinl. v. 89, 1 ; Leth. Hém. Nord, ed. ii. 95, 4 ; *Aphalara Sonchi*, Först. Verh. Ver. Rheinl. v. 96, 2 ; *Aphalara picta*, Flor, Rhyn. Livl. ii. 539, 6.

Greenish-yellow or dusky yellow, with darker streaks on the mesonotum. *Antennæ* yellowish; 1st and 2nd joints underneath brown ; 9—10 black. *Elytra* clear, or sometimes faintly yellowish and sprinkled with pale brown towards the apex.

*Head* greenish-yellow, or dusky yellow. *Antennæ* yellowish ; 1st and 2nd joints underneath more or less brown; 4—8 very narrowly brown at the apex; 9—10 black.

*Thorax: pronotum* pale greenish-yellow; *mesonotum* pale yellowish-green or dusky yellowish ; anterior portion with two small reddish-brown triangular patches in front ; posterior portion with four broad, pale brown or yellowish-brown longitudinal streaks. *Elytra* clear, or sometimes faintly yellowish, transparent; nerves yellow, their margins and the spaces enclosed by them more or less thickly sprinkled with pale brown, the particles more or less confluent ; sometimes the nerves towards, and at the apex, brown. *Legs* greenish or dusky yellowish. *Tarsi:* 2nd joint sometimes brownish. *Claws* brown.

*Abdomen* above fuscous-black ; posterior margin of the segments narrowly, and sides broadly, green ; underneath green.

Length $1\frac{3}{4}$—2 lines. The largest of all the known European species.

It appears to be a very common species on the Continent, occurring in damp meadows from June to the

end of August. I have only seen two examples, one taken by Dr. Power, the other by Mr. Douglas. Förster mentions having received it both from Messrs. Haliday and Walker.

### Genus Rhinocola.

*Head* much broader than long. *Crown* deflected, with a shallow fovea on each side; central channel obsolete; anterior margin convex; posterior margin faintly concave. *Ocelli* as in *Aphalara*. *Face* without lobes. *Antennæ* 10-jointed, very short; 9—10 slightly thickened, 3rd elongate, 4—10 about equal in length. *Eyes* placed on the side of the head; outer margin convex.

*Thorax: pronotum* narrow, somewhat deflected or horizontal; lateral margins about in a line with the outer margin of the eyes. *Elytra* not transparent, somewhat lanceolate; apex rounded; costal margin more convex than the dorsal one; stigma distinct.

In this and the preceding genus the crown and face appear as continuous, and not separated as in *Psylla* and *Trioza*.

Differs from *Aphalara* in the shape of the head and the elytra, and moreover possesses a stigma.

The species of this genus are minute.

#### Species 1. *Rhinocola ericæ*.

*Psylla Ericæ*, Curt. B. E. xii. 565, 25; *Rhinocola Ericæ*, Först. Verh. Ver. Rheinl. v. 91, 2; Flor, Rhyn. Livl. ii. 527, 2.

Green, greenish-yellow or yellow. *Antennæ* yellow; three terminal joints frequently brown. *Elytra* testaceous, semitransparent, finely wrinkled transversely.

*Head: crown*, posterior margin straight. *Antennæ* yellow; 8—10 joints frequently brown.

*Thorax: pro-* and *meso-notum* green, greenish-yellow or yellow. *Elytra* testaceous, semitransparent, finely wrinkled transversely, narrowed towards the apex; disk with or without minute brownish particles. *Legs* greenish-yellow or yellow. *Claws* brown.

*Abdomen* green; genital segments of both sexes yellow, or sometimes in the ♀ faintly brownish-yellow.

Length $\frac{3}{4}$ line.

The small size and more broadly-rounded apex of the elytra will at once establish the difference between this and the following species. Messrs. Walker and Haliday

both knew it as mentioned by Förster, but I have seen no recent specimens, except those taken by myself by sweeping heather in a portion of the New Forest near Fawley, in June last.

### Species 2. *Rhinocola aceris.*

*Chermes Aceris*, Lin. F. S. 264, 1014; S. N. ii. 739, 16.

Green or yellow. *Antennæ* pale green or yellow, apical joint brown. *Elytra* testaceous, scarcely transparent, finely wrinkled transversely. *Head: crown* almost horizontal; much broader than long; posterior margin straight. *Antennæ* pale green or yellow, apical joint brown.

*Thorax: pro-* and *meso-notum* green or yellow. *Elytra* testaceous, scarcely transparent, finely wrinkled transversely; radius extending to the middle of the narrowly-rounded apex. *Legs* pale green or yellow. *Claws* brown.

*Abdomen* green; ♀ genital segments yellow.

Length $1\frac{1}{8}$ line.

Nearly one-half as large again as *R. ericæ;* without brown particles on the elytra, and with the apex much more narrowly rounded.

I have only seen a single ♀ example taken by Dr. Power. Mr. Douglas informs me that on Monday evening last, 12th June, he met with it plentifully in Farm Lane, Lee, on the common maple (*Acer campestris*).

## Genus Livia, Latr.

*Head* horizontal; as long as the breadth on the posterior margin. *Crown* in front divided into two lobes by a deep valley, with a channel down the centre. *Face* not lobate. *Antennæ* short, 10-jointed; 2nd joint somewhat pyriform or conate, apex truncate, much longer than the 1st; 3rd stouter than the remainder, which are filiform.

*Thorax: pronotum* lemniscular. *Elytra* longish oval, coriaceous; radius reaching the apex above the middle; upper branch of the bifurcation of the cubitus adjoining the radius terminating in the middle.

### Species 1. *Livia juncorum.*

*Livia Juncorum*, Latr. Gen. Crust. et Ins. iii. 170, 399, 1; Enc. Méth. x. 225, 1; Germ. F. E. fasc. vi. t. 21; Burm. Hdb. ii. 97, 1; Cuv. R. A. t. 99 bis, fig. 2;

Curt. B. E. xi. 492 and pl.; Zett. I. L. 306, 1; Am. et Serv. Hém. 596, 1; Först. Verh. Ver. Rheinl. v. 91; Flor, Rhyn. Livl. ii. 542, 1; Leth. Hém. Nord, ed. ii. 95.

Brownish or reddish-pink. *Elytra* pale fuscous-testaceous; very finely wrinkled transversely.

*Head: crown* brownish or reddish-pink. *Antennæ* red or reddish-pink; 4—8 joints white, 9—10 black; 2nd somewhat pyriform or conate, apex truncate, at least three times longer than the 1st.

*Thorax: pro-* and *meso-notum* brownish or brownish-red. *Elytra* pale fuscous-testaceous, semitransparent, very finely wrinkled transversely; nerves concolorous; dorsal marginal nerve whitish, with minute fuscous spots at somewhat regular intervals between the apex of the clavus and that of the radius. *Legs* pale yellow. *Claws* brownish.

*Abdomen* above fuscous-yellow or brownish, sometimes with the posterior margin of the segments very narrowly pale reddish; underneath yellow.

Length 1 line.

On rushes (*Juncus conglomeratus*), &c. everywhere from June to the end of August.

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The following descriptions are extracted from Förster's Monograph, so copiously referred to in this paper. All the species had been taken either by Mr. Haliday or Mr. Walker, or sometimes by both, and were sent to and determined by Dr. Förster. Specimens of none of these have come under my notice.

Species 21. *Psylla ulmi.*

*Chermes ulmi*, Lin. F. S. 262, 1002; S. N. ii. 737, 2; Fab. E. S. iv. 221, 2; S. R. 303, 2; *Psylla Ulmi*, Först. Verh. Ver. Rheinl. v. 71, 5.

Green, with a slight mixture of yellow; extreme tip of the antennæ brown,—♂ sometimes the last joint, ♀ the two last (or the antennæ are entirely yellowish). *Face:* lobes somewhat long, broad from the base to the middle, but from there to the apex perceptibly smaller. *Elytra* clear, transparent; nerves pale yellow.

*Note.*—Nothing is said about the stigma.

This species was taken by Mr. Walker.

Species 22. *Psylla melanoneura.*

*Psylla melanoneura*, Först. Verh. Ver. Rheinl. v. 75, 17.

Reddish-yellow. *Mesonotum* posteriorly with pale markings. *Abdomen* above with brown bands, beneath pale. *Antennæ:* 3—6 joints at the apex and the remainder almost entirely brown. *Face:* lobes long, strongly narrowed to the apex. *Elytra* clear, transparent; nerves pale at the base, from the middle deep brown; inner margin, almost as far as the nerve adjoining the apex of the *clavus*, pale brownish (in one example the stigma is similarly coloured).

A single ♂ received from Mr. Walker.

Species 23. *Psylla æruginosa.*

*Psylla æruginosa*, Först. Verh. Ver. Rheinl. v. 97, 6.

Green. *Mesonotum* posteriorly with reddish-yellow markings. *Antennæ* and *legs* yellow, the former from the 3—8 joints brown at the apex; 9—10 brown, the latter more or less green. *Elytra* clear, transparent; nerves pale at the base, towards the apex reddish or almost brownish.

Through the colour of the nerves *P. æruginosa* may be distinguished at first sight from all other green species.

*Note.*—Nothing is said about the stigma.

Eight specimens received from Mr. Haliday.

Species 24. *Psylla occulta.*

*Psylla occulta*, Först. Verh. Ver. Rheinl. v. 98, 7.

Reddish-yellow. *Mesosternum* posteriorly with somewhat darker-coloured streaks. *Abdomen* above with brownish bands; underneath green. *Antennæ* and *legs* yellow; the former from the 3—8 joints brown at the apex, 9—10 brown. *Face:* lobes long; base broad; apex acute, widely divergent. *Elytra* clear, transparent; nerves at the base yellow, towards the apex reddish and somewhat darker.

*Note.*—Nothing is said about the stigma.

Two ♂s and three ♀s received from Mr. Haliday.

Species 9. *Trioza munda.*

*Trioza munda*, Först. Verh. Ver. Rheinl. v. 88, 22; Flor, Rhyn. Livl. ii. 515, 11.

Green or yellowish. *Mesonotum* brown. *Antennæ:* 1st and three terminal joints brown. *Abdomen* yellow-green. *Legs* yellow. *Face:* lobes somewhat long and moderately pointed. *Elytra* clear, transparent, radius reaching the costal margin at some distance from the apex.

One ♂ received from Mr. Walker and another from Mr. Haliday.

Flor says he meets with this species commonly in July and August on *Urtica.*

Species 10. *Trioza abieticola.*

*Trioza abieticola*, Först. Verh. Ver. Rheinl. v. 88, 21; Flor, Rhyn. Livl. ii. 496, 2; *Trioza argyrea*, Meyer, Mitth. schw. ent. Ges. iii. 390.

Sordid yellow. *Mesonotum* with confluent brown streaks. *Abdomen* with brown bands. *Antennæ* yellow; 9—10 joints brown. *Face:* lobes somewhat short and stout, moderately pointed. *Elytra* clear, transparent; 2nd forked cell very small, radius very near to the costal margin posteriorly, terminating near the apex; costal margin near the base with a black-brown streak, whereby this species may be easily recognized from *T. curvatinervis.*

A ♀ sent by Walker as *Psylla Abietis;* but as there was already a species bearing that name, Förster described it under the one now given. Flor takes it not uncommonly on the spindle tree (*Euonymus europæus*), and also on the spruce fir (*Pinus abies*), in May and August.

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CORRIGENDA.

Page 543, Species 14. *Psylla viridissima*, add name and description to that of *P. Mali*, of which it is only a form.

*Note.*

*Psylla fumipennis*, Först., sp. 11, p. 92 of the Catalogue of British Hemiptera, has been altered in this Monograph to *P. Löwii*, n. sp., the former being synonymous with *P. Pruni*, Först., and the one described at p. 541 being new to science.

## DESCRIPTION OF PLATES.

### PLATE VIII.

Fig. 1. *Arytæna ulicis*, Curt.
1*a*. Head of do., front view.
1*b*. Elytron and wing of do.
1*c*. Abdomen of ♂, side view.
1*d*. Genitalia of ♂, as seen from behind.
1*e*. Abdomen of ♀, side view.
1*f*. Do. of ♀, underneath.
2. Elytron of *Psylla spartiophila*, Först.
3. Do. „ *salicicola*, Först.
4. Do. „ *fraxinicola*, Först.
5. Do. „ *rhamnicola*, n. sp.
6. Do. „ *pyri*, L.
7. Do. „ *ferruginea*, Först.
8. Do. „ *costato-punctata*, Först.
9. Do. „ *Löwii*, Scott.
10. Do. „ *pruni*, Scop.

### PLATE IX.

Fig. 1. Elytron and wing of *Trioza Walkeri*, Först.
2. Elytron of *Trioza urticæ*, L.
3. Do. „ *acutipennis*, Zett.
4. Do. „ *galii*, Först.
5. Do. „ *albiventris*, Först.
6. Do. „ *hæmatodes*, Först.
7. Do. „ *salicivora*, Reuter, MS.
8. Do. *Spanioneura Fonscolombei*, Först.
9. Do. *Aphalara picta*, Zett.
10. Do. „ *exilis*, Weber et Mohr.
11. Do. „ *polygoni*, Först.
12. Do. „ *radiata*, n. sp.
13. Do. *Rhinocola aceris*, L.

## XVII. *Notæ Dipterologicæ. No.* 4.—*Monograph of the genus* Systropus, *with notes on the economy of a new species of that genus.* By J. O. Westwood, M.A., F.L.S., Pres. Ent. Soc., &c.

[Read 6th September, 1876.]

In a collection of insects sent from Natal by Herr Gueinzius were several specimens of a new species of the remarkable Dipterous genus *Systropus*, together with several cocoons and their contents found upon a tree of the genus *Mimosa*, from one of which one of the *Systropi* had been bred. The perfect insect itself is described below, under the name of *S. crudelis*.

The cocoons are of an oval form, except that on one side they are flattened, showing marks of having on that side been attached to the bark of a branch or stem of the tree. At one end is a circular piece which is easily disengaged, the insect making its escape through the orifice formed by its removal. This cocoon is 7 lines long. The outer surface is quite smooth but not shining; the inner surface is also smooth and glossy, having its upper end of a darker colour than the remainder of the interior. In the absence of direct information we can only conjecture that the cocoon is that of a species of Egger moth (as certain British species are termed from the egg-like cocoon formed by their caterpillars), whilst the thick, parchment-like covering and shape of the cocoon agrees with those of the stinging larvæ of the genera *Limacodes* or *Doratifera*.

Within each of these cocoons was found the pupa represented, magnified in the accompanying figures 6, 7 and 8, of a short and thickened form, and quite unlike the parasitical pupæ of *Anthrax* or *Bombylius*. The head-piece is armed with a strong, conical, frontal projection, by means of which the pupa is doubtless enabled to push off the operculum at the end of the cocoon. The head on the underside is furnished with a long appendage, extending along the breast as far as the first ventral segment; its basal half is grooved down the centre as though it consisted of two halves; these are probably the antennæ cases: the remainder of the appendage seems jointed in the middle.

This is evidently the sheath of the proboscis. The cases of the two fore legs are very short and bent back at the extremity of the femora, lying close upon the breast, whilst the cases of the two middle legs are more elongated, also resting upon the breast and extending as far as the wing covers; which latter cover the cases of the hind legs, except the extremity of the tibiæ and the five-jointed tarsi. The abdomen is very robust and convex, each segment having a strong, short, curved bristle at each side, whilst the dorsal surface of each of the principal segments is furnished with a transverse row of very short, fine spines, which doubtless assist, with the lateral spines, in enabling the insect to push itself forward through the front orifice of the cocoon when the cap is removed.

No one looking at this pupa would have supposed that it could have produced such an elongated, slender imago as the *Systropus;* but, fortunately, in one of the specimens the perfect insect had been secured in the act of making its escape from the pupa case, as represented in figure 9. Moreover, there can be no doubt from the necromorphous character of the pupæ (the limbs lying free, not soldered down as in the pupa of Lepidopterous insects), that the pupa is really that of a Dipterous insect and not of a Lepidopterous insect, within which the parasitic Dipteron had been reared. Although searched for with much care I did not succeed in finding, lying within the cocoon, any portion of the skin of the larva by which it had been formed, and suppose, therefore, that the parasite had entirely devoured it. Hence arises the question as to the precise nature of the parasitism of the *Systropus*. Was its larva an internal parasite, like the larva of the *Tachinæ?* or was it external, like the larva of *Scolia*, as described by Passerini? The latter seems to imply difficulties in the formation of a compact, oval cocoon, like that before us, by a caterpillar infested by an external parasite, unless we suppose that it was not until the cocoon had been formed, that the egg of the parasite, which had been attached to the outer surface of the caterpillar, had hatched, so as to enable the parasitic larva to feed without hindrance upon its prey within the closed cell of the cocoon. Further observations are therefore needed to determine this curious question.

The specimen of the imago making its escape from the pupa skin, as shown in fig. 9, exhibited the different parts of the mouth in a condition very different from their ap-

pearance when fully developed; instead of forming an apparently solid, single, porrected proboscis with the end divided into two recurved, slender lobes, the mouth presented four delicate, straight lancets, represented in fig. 10; one, the longest (fig. 10*a*), representing the labium; another, about two-thirds of the length of the former, which I regard as the tongue (fig. 10*b*), two still shorter pieces which seem to represent the maxillæ (fig. 10*cc*); and at the base are two short, thicker pieces which I regard as the palpi (fig. 10*dd*); the upper lip (labrum) would thus be unrepresented.

It is interesting to find that the species of this anomalous genus are not confined to a narrow geographical range, but are very widely distributed; being natives of Africa, India, the Malayan Archipelago and South America.

Two additional species of the genus have, I believe, been described by Signor Costa; but I have not been able to meet with the memoir in which his descriptions are published.

## Division A. Species Africanæ.

### Sp. 1. *Systropus macilentus.*

"Thorace nigro, utrinque subcoccinelleo; abdomine fusco, basi apiceque nigro, alis infumatis."

"Fühler braun, 2 und 3 Glied schwarz: Untergesicht braun, Mundspalte strohgelb, Stirne gelblich. Augen am Scheitel in Berührung: Augenhöhlenränder silberweiss. Rückenschild mit sehr kurzen weisslichen Härchen; neben dem Schildchen an jeder Seite ein strohgelber Punkt. Hinterleibstiel ocherbraun. Schwinger braun; Knopf unten weisslich, oben schwarz. Beine reinbraun; Spitze der hintersten Schenkel schwarz; hinterste Schiene rostgelblich, mit schwarzer Spitze. Fusswurzelspitze bräunlichschwarz."

Long. corp. lin. 7.

Habitat apud Promont. bonæ spei.

In Mus. Berol. et Westermann. Etiam in Sierra Leone (Morgan). In Mus. Britann. (teste Walker, an recte?)

*Systr. macilentus*, Wiedemann, Nov. Dipt. gen. p. 19, fig. 7; Auss. zweifl. Ins. 1, p. 360, pl. 5, fig. 6; Macquart, Hist. Dipt. 1, p. 592, pl. 9, fig. 21; Walker, Cat. Dipt. Brit. Mus. p. 1154.

Sp. 2. *Systropus leptogaster.*

"Niger, facie humeris coxisque anticis pallidissime flavis, abdominis segmentis 2ndo, 3tio, 4to, et 5to rufis, vittâ nigro-brunneâ signatis, cellulis alarum submarginalibus tribus."

Long. corp. lin. $6\frac{1}{2}$; long. alar. lin. $4\frac{2}{3}$.

Habitat in Caffrariâ (Wahlberg).

*Systropus leptogaster*, Loew. Dipt. S. Afr. p. 200.

Sp. 3. *Systropus crudelis*, Westw. (Pl. X. fig. 1—12.)

Niger, opacus, griseo-sericeus, antennarum articulo basali, pedibus cum coxis anticis (basi femorum apicibusque tarsorum nigricantibus exceptis), lateribus thoracis, ad basin alarum, abdominis segmentis tribus basalibus, ferruginosis; facie antice fuscâ tibiisque anticis argenteo-sericeis; alis pallide cinereis, costâ late maculâque subcostali ante medium alarum nigris.

Long. corp. lin. 9; expans. alar. lin. 11.

Habitat in Natalià (Gueinzius). In Mus. Hopeiano Oxoniæ.

Variat paullo major, facie inter oculos antice, angulis anticis humeralibus thoracis, fasciâ tenui transversâ postscutellari ferrugineis, pleuris prothoracis puncto utrinque albido, metasterno post pedes posticos magis convexo.

Habitat in Damara Land (Anderson). In Mus. Hopeiano Oxoniæ.

*S. macilento* major et minus ferruginosus et e *S. leptogastro* coxis anticis obscure coloratis primo intuitu distinctus.

Division B. Species Asiaticæ.

Sp. 4. *Systropus Ophioneus.*

Niger, thorace flavo-maculato, abdomine obscure fulvo, strigâ dorsali nigrâ; femoribus posticis ferrugineis; tibiis posticis basi et apice pallidis, tarsis posticis nigris.

Long. corp. lin. 7; expans. alar. lin. $9\frac{1}{2}$.

Habitat in Indiâ Orientali (D. Boys). In Mus. Hopeiano Oxoniæ (olim nostr.).

*Systropus Ophioneus*, Westw. Trans. Ent. Soc. v. p. 233, pl. 23, fig. 6.

Caput antice inter oculos albidum. Thorax humeris, lateribus antice, cum coxis anticis, maculâ utrinque trigonâ ante alas, puncto parvo utrinque ante scutellum

alteroque scutellari, albidis. Pedes antici flavidi, femoribus prope basin obscurioribus; pedibus intermediis flavidis, femoribus nigricantibus apice pallidis, tibiis mediis in medio obscuris. Alæ clariores, venis nigris.

Sp. 5. *Systropus Polistoides*, Westw.

Niger, albido-variegatus; alis grisco-fuscescenti tinctis, puncto medio obscuro; antennis nigris, articulo basali albo.

Habitat Chantibon, Siam (Mouhot).

Head black, eyes united on crown of head; face narrow, widening below, albidous and silvery, the orifice for the rostrum extends half-way up the narrowed front. Antennæ black, basal joint albidous, extreme tips black; 2nd joint short, black; 3rd more than two-thirds the length of the 1st, flat, black, broader than the other joints.

Thorax black, anterior lateral angles with a large albidous spot extending irregularly down the sides and touching the base of anterior coxæ; a quadrate spot on each side of the dorsum of thorax in front of each wing; a transverse line behind wings, extending across dorsum, with each end pointed and directed forwards; a very minute spot at the base of each of the halteres, and a large oblong spot on each side of the thorax below the wings, extending to the base of the hind legs. Halteres brownish, with white knobs. Abdomen with their basal joints albidous, the upper part of each black, the black extending at the extremity of each joint down the sides of the joints, 4th segment black, with a basal albidous fascia, interrupted with black in the middle of the back; 5th, 6th and 7th segments black, with the hind margin of each narrowly albidous. Anterior coxæ albidous, fore legs albidous, basal half of femora and four terminal joints of tarsi black; middle legs similarly coloured; hind femora and tibiæ pale brown above, albidous below, tips of tibiæ black; tarsi brown, terminal joints black; wings smoky-grey, slightly tinged with yellowish on the costa, veins black, a spot behind the middle of the costa blackish (where the veins fork).

Sp. 6. *Systropus Eumenoides.* (Pl. X. fig. 13—15.)

Flavus, antennarum apice thoraceque nigro-variegato, abdomine apicem versus nigro-fasciato.

Long. corp. lin. 9.

Habitat in partibus septentrionalibus Indiæ orientalis. In Mus. Britann., olim Saunders.

*Systropus Eumenoides*, Westw. in Guérin-Méneville, Mag. Zool. 1842, pl. 90, texte, p. 4.

Antennæ flavæ, articuli 1mi summo apice articulisque 2ndo et 3tio nigris. Facies et pars postica capitis flavæ. Thorax flavus, vittâ anticâ mediâ, maculâ magnâ cordiformi discoidali, maculis duabus parvis versus humeros alterisque duabus cuneatis ad basin alarum extensis nigris. Sternum posticum flavum, nigro-maculatum. Abdomen segmento 1mo supra nigro, quatuor proximis flavis, lineâ tenui dorsali interruptâ fuscâ, duobus proximis nigris, margine postico flavis. Halteres flavi. Alæ flavido-hyalinæ, costâ parum obscuriori, venis postcostalibus fulvis; aliis fuscis. Pedes quatuor antici flavi; tarsis summo apice nigris. Pedes postici femoribus fusco-flavidis; tibiis flavis, vittâ externâ fuscâ annuloque subapicali nigricanti, tarsis vittâ superâ fuscâ.

Sp. 7. *Systropus sphegoides.*

Niger; capite albido-testaceo, antennis apicem versus lanceolatis, thorace strigis quatuor lateralibus pallide flavis; abdomine lurido, basi et apicem versus nigro, petiolo longissimo; femoribus subtus tibiisque apice luridis, alis nigricanti-cinereis, halteribus albidis, nigro-fasciatis.

*Systropus sphegoides*, Walker in Proc. Linn. Soc. vol. iv. p. 113.

Male.—Black, head white behind, whitish testaceous in front about the eyes; proboscis longer than the breadth of the head, its sheaths diverging and convoluted at the tips; antennæ a little longer than the proboscis, lanceolate towards the tips; thorax with two pale yellow streaks on each side, one in front the other behind the wing; abdomen lurid black at the base above and towards the tip, where it is fusiform, its petiole very long and slender; femora beneath and tibiæ towards the tips lurid; wings blackish-grey, veins black; halteres whitish, with a black subapical band.

Length of the body 7 lines; of the wings 8 lines.

Habitat in insulâ Makassar. Etiam (sub nomine *S. sphecoides*) in insulâ Celebes; Walk., Proc. Linn. Soc. ix. p. 15.

In Mus. Britann. (olim Saunders).

Sp. 8. *Systropus tipuloides.*

Niger, opacus, facie antice, thoracis vittâ transversâ anticâ (in medio interruptâ), cum pleuris, punctisque

duobus utrinque ad basin alarum; abdomine piceo, subtus et incisuris segmentorum basalium albidis; pedibus anticis flavidis, coxis nigris, pedibus intermediis piceis; tibiis tarsisque pallidioribus, pedibus posticis piceis, femoribus subtus et apicibus castaneis; tibiis basi apiceque anguste albidis, tarsis basi albidis; alis obscure cinereis, halteribus piceis, clavæ apice et subtus albidis.

Long. corp. lin. 9; expans. alar. lin. 13.

Habitat in insulâ Sulu Malayanâ (Wallace). In Mus. Hopeiano Oxoniæ.

## Division C. Species Americanæ.

### Sp. 9. *Systropus nitidus.*

"Niger; thorace utrinque albo-picto, ventre aurantiaco."

"Fühler schwarz, schlanker als bei *S. macilentus*, und das Endglied ein wenig langer als das vorletzte: Untergesicht strohgelb, an beiden Seiten silberschimmernd. Stirn ebenso: Rückenschild tief schwarz, an den Schultern und Seitenrändern strohgelb, welches an der Flügeleinlenkung unterbrochen ist. Brustseiten ganz vorn strohgelb, weiter hinten weissschimmernd, dazwischen schwarz; Hinterleib oben auf schwarz. Bauch gelb was nach hinten immer mehr pomeranzenfarb wird. Flügel licht rauchgrau; Adern schwarz. Schwingerstiel strohgelb, Knopf schwarz, doch oben auch gelb: hinterste Beine schwarz; vordere gelb."

Long. corp. lin. 10, mas.

Habitat in Brasiliâ. In Mus. Berol.; etiam e Bogotâ; in Mus. Hopeiano Oxoniæ.

*Systr. nitidus*, Wiedemann, Auss. zweifl. Ins. 11, p. 641; Westw. in Guérin, Mag. Zool. 1842.

There is a specimen named *S. nitidus* in the British Museum, from the Saunders Collection, without locality, and with the sides of the front part of the thorax whitish, with a black spot.

### Sp. 10. *Systropus fumipennis.*

Niger; thorace vittâ mediâ cinereâ; pedibus nigris; alis cinereo-hyalinis, nubilâ fuscâ pone medium.

Long. corp. lin. 9.

Habitat in Brasiliâ.

In Mus. Britann. et Hopeiano Oxoniæ (olim nostr.).

*Systropus fumipennis*, Westw. in Guérin-Ménev. Mag. Zool. 1842, text of pl. 90, p. 3.

Syn. *Systropus niger*, Walker, Cat. Dipt. Brit. Mus. p. 1154. In Mus. Britann.

Antennæ nigræ, articulo 3tio 2ndo triplo longiori. Thorax niger, puncto minuto utrinque albido ad angulos anticos, vittâ mediâ longitudinali dorsali cinereâ, lateribus albo-sericeis. Pedes nigri, femoribus duobus anticis basi externe rufis. Halteres picei, clavâ nigrâ subtus albâ. Abdomen nigrum, segmentis basalibus subtus pallidioribus. Alæ obscure cinereo-hyalinæ, costâ obscuriori, puncto nigricanti ad furcationem venæ postcostalis, et nubilâ fuscâ transversâ versus apicem alarum.

Sp. 11. *Systropus Fœnoides.*

Niger, thoracis dorso cinereo longitudinaliter vittato, lateribus antice vittâ abbreviatâ transversâ albidâ, metanoto utrinque puncto albido minuto notato; abdomine basi supra nigro, subtus albido; apice rufo-fulvo; pedibus nigris; anticis subtus albidis.

Long. corp. lin. 9.

Habitat in Mexico.

In Mus. Hopeiano Oxoniæ (olim nostr.).

*Syst. Fœnoides*, Westw. in Guérin-Méneville, Mag. Zool. 1842, text of pl. 90, p. 2.

Antennæ nigræ, articulo 3tio 2ndo duplo longiori. Facies inter oculos, margines cavitatis oralis et pars postica capitis albo-sericei. Thorax supra niger, vittis duabus longitudinalibus cinereis; humeris maculâ parvâ transversâ cuneatâ, et angulis posticis mesothoracis scuti albidis punctoque minuto flavescenti, utrinque ad latera scutelli. Epimera prothoracica albida, meso- et meta-thoracica nigra, albo-sericea, sterno subtus abdominis insertionem transverse rugoso et cavitate conicâ ad basin abdominis extensâ membranâ tectâ. Halteres picei, clavâ supra nigrâ, subtus albâ. Abdomen supra dimidio basali nigro, subtus albido, apice fulvo supra obscuriori. Pedes antici nigri, femoribus externe ad basin rufis, apice tibiis articulisque duobus basalibus tarsorum externe albis. Pedes intermedii nigri, femoribus apice, tibiis totis articulisque duobus basalibus tarsorum externe albis. Pedes postici nigri, puncto ad basin tibiarum albo. Alæ cinereo-hyalinæ, costâ paulo obscuriori, puncto parvo nigricanti ad furcationem venæ postcostalis.

## DESCRIPTION OF PLATE X.

Fig. 1. The cocoon of the natural size, seen in front.

Fig. 2. The same seen sideways.

Fig. 3. The same seen from behind, the flattened part being removed, showing the dark upper part.

Fig. 4. The upper end of the same after the removal of the operculum, showing the head of the enclosed pupa.

Fig. 5. The operculum or top of the cocoon.

Fig. 6. The pupa seen sideways.

Fig. 7. The ventral surface of the same.

Fig. 8. The dorsal surface of the same.

Fig. 9. The pupa seen laterally, showing the front part of the body of the imago protruded from its anterior end.

Fig. 10. The parts of the mouth shown by the imago whilst in the act of making its escape.

Fig. 11. The perfect insect, *Systropus crudelis.*

Fig. 12. One of its wings.

Fig. 13. *Systropus Eumenoides.*

Fig. 14. Thorax of the same, seen sideways.

Fig. 15. Dorsal view, showing the segmentation of the thorax.

# XVIII. *Descriptions of a new genus and of new species of* Halticinæ. By Joseph S. Baly, F.L.S.

[Read 5th July, 1876.]

## List of Species.

| | |
|---|---|
| Sphærophysa (n. g,) clavicornis .. .. | Madagascar. |
| Sphæroderma picea .. .. .. .. | Shanghai. |
| Thyamis binotata .. .. .. .. | „ |
| „ Godmani .. .. .. .. | „ |
| Nisotra Bowringii .. .. .. .. | Hong Kong. |
| Crepidodera interrupta .. .. .. | Brazil. |
| „ flavescens .. .. .. | „ |
| „ dimidiata .. .. .. | Australia. |
| Trichaltica amazona .. .. .. | Pará. |
| „ elegantula .. .. .. | Brazil. |
| „ dentata .. .. .. | „ |
| Epitrix subvestita .. .. .. .. | „ |
| „ apicicornis .. .. .. .. | Pará. |
| „ nucea .. .. .. .. .. | Brazil. |
| „ segregata .. .. .. .. | Bahia. |
| „ sejuncta .. .. .. .. | Pará. |
| „ serratula .. .. .. .. | „ |
| „ torrida .. .. .. .. | Brazil. |
| „ cœruleata .. .. .. .. | „ |
| „ cyanella .. .. .. .. | Pará. |
| Plectroscelis ingenua .. .. .. .. | China. |
| „ simplicifrons .. .. .. | „ |
| „ bella .. .. .. .. | „ |
| „ philoxena .. .. .. | „ |
| „ discreta .. .. .. .. | „ |
| „ granulifrons .. .. .. | „ |
| „ compressipes .. .. .. | Guinea. |
| „ australica .. .. .. | Western Australia. |
| Dibolia intermedia .. .. .. .. | South Africa. |
| „ Trimeni .. .. .. .. | „ |
| „ gravida .. .. .. .. | Guinea. |
| Psylliodes Novæ Caledoniæ .. .. .. | New Caledonia. |
| „ Breweri .. .. .. .. | Western Australia. |
| „ quadridentata .. .. .. | „ |

## Genus Sphærophysa.

*Corpus* rotundatum, valde convexum. *Caput* breve, perpendiculare, ad thoracem immersum; *antennis* corporis dimidio brevioribus, extrorsum compressis et in clavam unilateralem dilatatis; *encarpis* distinctis; *carinâ* cuneiformi. *Thorax* transversus. *Elytra* thorace latiora, convexa, punctato-striata, limbo inflexo plano. *Pedes* robusti;

*coxis* anticis prosterno æquialtis; *femoribus* anticis quatuor modice, posticis valde incrassatis; *tibiis* anticis quatuor dorso non canaliculatis, apice muticis; tibiis posticis brevibus, validis, recurvatis, dorso canaliculatis, apice spinâ validâ armatis; unguiculis appendiculatis. *Prosternum* planum, late oblongum; *acetabulis* anticis integris.

*Sphærophysa clavicornis.*

Rotundata, convexa, subtus nitida, supra subopaca, testaceo-fulva, antennarum clavâ nigrâ; elytris fuscis, limbo laterali late testaceo-fulvo.

Long. 2 lin.

*Hab.*—Madagascar.

Vertex rather coarsely punctured, front separated from the face by a deep groove which runs upwards on either side along the upper border of the eye; encarpæ well defined, oblique, separated from each other by the apex of the wedge-shaped carina, the latter flat, not elevated; antennæ rather longer than the head and thorax, six outer joints dilated and compressed, forming an unilateral club, five outer joints black. Thorax transversely convex, three times as broad as long; sides rounded and converging from base to apex, anterior angle produced in front, thickened, obtuse; basal margin bisinuate on either side, medial lobe produced, its apex rounded; surface coarsely and rather closely punctured on the sides, the punctures rather more scattered on the disk. Scutellum trigonate. Elytra rather deeply punctate-striate; the interspaces covered with coarse punctures, which render the striæ themselves indistinct.

Genus Sphæroderma, Stephens.

*Sphæroderma picea.*

Rotundata, convexa, pallide picea, nitida, antennis extrorsum nigris; thorace distincte, subremote, elytris substriatim punctatis.

Long. 1 lin.

*Hab.*—Shanghai; Mr. Lewis.

Vertex smooth, impunctate; encarpæ contiguous, transverse; carina broad, very slightly elevated; eyes coarsely granulose, black; antennæ rather more than two-thirds the length of the body, five lower joints obscure fulvous,

the rest black; second joint thickened, longer than the third. Thorax twice as broad as long; sides converging and distinctly rounded from base to apex; anterior angles obliquely truncate, thickened; basal margin bisinuate on either side, medial lobe slightly produced, rounded; upper surface smooth and shining, distinctly but not closely punctured. Elytra more strongly punctured than the thorax, the punctures arranged in irregular longitudinal rows; interspaces smooth, impunctate.

Genus Thyamis, Stephens.

*Thyamis binotata.*

Ovata, convexa, pallide flavo-fulva, nitida, oculis nigris; thorace transverso, minute et remote punctulato; elytris sub-lente distincte punctulatis, utrisque pone medium maculâ subrotundatâ nigrâ notatis; femoribus tibiisque posticis piceo-tinctis.

Long. $\frac{4}{5}$ lin.

*Hab.*—Shanghai; Mr. Lewis.

Encarpæ contiguous, transverse, subtrigonate; carina obsolete; antennæ filiform, basal joints thickened, second moderately thickened, nearly as long as the first; third, fourth and fifth each equal in length to the second. Thorax nearly twice as broad as long; sides broadly margined, diverging from the base to the middle, thence straight and parallel to the apex, anterior angles obliquely truncate, slightly thickened; above transversely convex, very faintly impressed transversely at the base, the sulcation being only visible in certain lights; very minutely and distinctly punctured. Scutellum broadly semi-ovate. Elytra much broader than the thorax, broadly ovate, convex, under a lens distinctly punctulate.

*Thyamis Godmani.*

Elongato-ovata, convexa, nigra, nitida, antennis basi pedibusque obscure piceo-fulvis; thorace tenuiter subremote punctulato; elytris distincte punctulatis.

Long. 1 lin.

*Hab.*—Shanghai; collected by Mr. Godman.

Encarpæ obsolete; carina broad, linear, slightly raised; vertex smooth, impunctate; four lower joints of antennæ piceo-fulvous, fifth and sixth dark piceous, the rest black. Thorax about one-third broader than long; sides mar-

gined, slightly diverging and slightly rounded from the base to beyond the middle, thence abruptly thickened and obliquely truncate to the apex; lower angle of the truncation produced into a distinct tooth; upper surface transversely convex, finely but distinctly punctulate. Scutellum transverse, broadly rounded. Elytra broader than the thorax, oblong-ovate, distinctly punctulate.

Genus Nisotra, Baly.

*Nisotra Bowringii.*

Rotundato-ovata, convexa, fulvo-testacea, nitida, antennis, basi exceptis, nigris; elytris cyaneis, subremote, irregulariter substriatim punctatis.

Var. A. Pectore abdomineque piceis.

Long. 1—1¼ lin.

*Hab.*—Hong Kong; Mr. Bowring.

Head smooth, impunctate; encarpæ and carina obsolete; clypeus smooth, trigonate; eyes coarsely granulose, black; antennæ with the four lower joints flavo-fulvous, the fifth piceous, the rest black; apex of jaws piceous. Thorax three times as broad as long; sides nearly straight and parallel behind the middle, thence converging and rounded to the apex, anterior angles obtusely truncate, slightly produced laterally; upper surface under a lens very minutely and somewhat distantly punctulate; extreme lateral margin, together with the hinder border on either side, narrowly edged with nigro-piceous. Elytra broader than the thorax; distinctly punctured, the punctures irregularly arranged in ill-defined double longitudinal rows; interspaces minutely punctured.

Genus Crepidodera, Foud.

*Crepidodera interrupta.*

Anguste ovata, convexa, piceo-fulva, nitida, thorace lævi, disco impunctato, sulco basali fere recto, fortiter punctato; elytris infra basin transversim depressis, sat fortiter punctato-striatis, punctis piceis, striis septimâ et octavâ infra basin interruptis.

Long. 1⅙ lin.

*Hab.*—Brazil, New Friburg.

Vertex smooth, impunctate, grooved line separating the front from the encarpæ finely punctured; encarpæ trian-

gular, contiguous; carina short, linear; clypeus large, smooth, impunctate, its surface concave; antennæ three-fourths the length of the body, slender, filiform; 3rd joint distinctly longer than the 2nd. Thorax nearly twice as broad as long; sides straight at the base, slightly convex before the middle, slightly diverging from base to apex, anterior angle obliquely truncate, slightly produced laterally; basal border sinuate on either side the medial lobe; the latter moderately produced, broadly rounded; disk smooth, impunctate, basal groove nearly straight, impressed with a single row of distinct punctures. Elytra broader than the thorax; sides subparallel, their apices conjointly acutely rounded; above convex, broadly depressed transversely below the basilar space, the humeral callus thickened; somewhat strongly punctate-striate, the striæ at the extreme apex confused and less strongly punctured, the seventh and eighth interrupted at a level with the transverse depression; interspaces plain, those on the outer disk more or less thickened.

*Crepidodera flavescens.*

Anguste ovata, convexa, flava, nitida, thorace impunctato, sulco basali flexuoso, profunde impresso; elytris glabris, infra basin non depressis, regulariter punctato-striatis, punctis prope apicem fere deletis.

Long. $\frac{2}{3}$ lin.

*Hab.*—Brazil.

Vertex smooth, impunctate, front impressed on either side just above the interocular space by a deep excavation; encarpæ small, trigonate, not contiguous; carina linear; antennæ more than half the length of the body, entirely flavous, second and two following joints nearly equal in length. Thorax more than one-half as broad again as long; sides straight and parallel, anterior angle obliquely truncate, produced laterally into an acute tooth; basal margin sinuate on either side the medial lobe, the latter produced, its apex broadly rounded; upper surface convex, smooth and shining (when seen under a deep lens minutely granulose); basal groove deeply impressed, distinctly angulate in the middle, its surface impunctate. Elytra broader than the thorax, ovate, slightly attenuated towards the apex; surface not excavated below the basilar space,

regularly punctate-striate, the punctures towards the apex nearly obsolete.

*Crepidodera dimidiata.*

Subelongata, convexa, nigro-picea, capite (antennis extrorsum exceptis), thorace pedibusque anticis quatuor rufo-fulvis; elytris obscure metallico-purpureis, tenuiter punctato-striatis, nitidissimis; pedibus posticis piceis, femoribus posticis cyaneo-micantibus.

Long. $1\frac{2}{3}$ lin.

*Hab.*—Australia; a single specimen without precise locality.

Vertex smooth, impunctate; encarpæ oblique, narrow, flexuose, separated by the linear carina, which is confluent at its apex with the front; eyes prominent, rotundate; labrum piceous; antennæ two-thirds the length of the body; four lower joints rufo-fulvous, the rest black; 1st and 2nd joints stained above with piceous. Thorax about one-half broader than long; sides parallel, very slightly rounded, anterior angles obliquely truncate, the hinder angles acute; upper surface convex, smooth, impunctate; basal groove well defined. Elytra broader than the thorax, oblong, convex, not depressed below the basilar space, regularly but not strongly punctate-striate; interspaces plain, impunctate. Hinder tibia curved, the upper surface flattened from below the base to the apex, its lower half moderately dilated, very slightly concave and sinuate; the outer margin armed with a row of minute teeth.

Genus Trichaltica, Harold.

*Trichaltica amazona.*

Subelongata, convexa, fulvo-picea, nitida, antennis basi pedibusque pallide fulvis; thorace fortiter, subremote punctato; elytris setosis, obscure metallico-viridibus, fortiter punctato-striatis.

Var. A. Capite cum antennis totis, thoraceque rufo-fulvis.

Long. $\frac{3}{4}$ lin.

*Hab.*—Pará.

Encarpæ and lower portion of face pale fulvous; vertex smooth, impressed on either side just above the encarpæ with a few large foveæ; eyes black; antennæ two-thirds

the length of the body, five outer joints slightly thickened, pale piceous. Thorax more than one-half broader than long; sides moderately rounded, faintly bisinuate, anterior angles obtuse, hinder angles distinct, acute; medial lobe slightly produced, obtuse; upper surface transversely convex; disk strongly but subremotely punctured; basal groove deeply impressed. Elytra broader than the thorax; sides parallel, apex regularly rounded; above convex, not excavated below the basilar space, strongly punctate-striate; interspaces on the outer disk and towards the apex thickened; the metallic green colour sometimes tinged with blue; under surfaces of head and thorax, together with the legs, pale fulvous; breast and abdomen piceous.

*Trichaltica elegantula.*

Subelongata, convexa, nigro-picea, nitida, capite (antennis extrorsum exceptis), thorace minus fortiter impresso pedibusque rufo-fulvis; elytris setosis, metallico-viridibus, fortiter punctato-striatis.

Var. A. Capite thoraceque nigro-æneis. *Crepidodera elegantula*, Baly, Trans. Ent. Soc. 1865, p. 343.

Long. 1—1¼ lin.

*Hab.*—Brazil.

Vertex impressed, as well as the inner borders of the eyes, with large round foveæ; encarpæ subtrigonate, contiguous at the inner angle; carina narrowed; antennæ scarcely half the length of the body; six outer joints slightly thickened, pitchy black; eyes black. Thorax nearly one-half as broad again as long; sides straight and slightly diverging from the base to beyond the middle, thence rounded and converging to the apex, anterior angles very obliquely truncate; lateral margin irregularly crenate; basal margin nearly straight, the medial lobe not produced; upper surface remotely punctured; basal groove deeply impressed, divided in the middle by a longitudinal ridge. Elytra broader than the thorax, oblong, convex, not excavated below the basilar space; strongly punctate-striate; interspaces slightly thickened on the outer disk and towards the apex.

Nearly allied in form and colouration to *T. amazona*, differing from that insect in the form and sculpturing of the thorax.

*Trichaltica dentata.*

Elongata, convexa, nigro-picea, nitida, facie inferiori, antennis basi, thorace pedibusque rufo-fulvis; thorace rude punctato, lateribus ante medium bidentatis; elytris setosis, metallico-violaceis, fortiter punctato-striatis; tarsis piceis.

Long. 1 lin.

*Hab.*—Brazil; a single specimen, formerly in the possession of the late A. Deyrolle.

Vertex piceous, with a metallic tinge, smooth and shining, impressed on either side above the encarpæ with a few round, foveate punctures; encarpæ subovate, contiguous; antennæ scarcely half the length of the body, gradually thickened near the apex, six outer joints pitchy black. Thorax more than a third broader than long; sides slightly diverging from the base to beyond the middle, thence converging to the apex; lateral border just before its middle produced into a distinct tooth; the obliquely truncate anterior angle produced laterally into a second tooth, placed a short distance in front of the former one; basal lobe scarcely produced, subsinuate; disk deeply and coarsely punctured, basal groove closely punctured. Elytra broader than the thorax; sides parallel; apex regularly rounded; above convex, not impressed below the basilar space; strongly punctate-striate; interspaces on the outer disk and toward the apex thickened.

The coarsely punctured thorax, with the teeth on its lateral border, will at once distinguish this species.

Genus Epitrix, Foud.

*Epitrix subvestita.*

Ovata, convexa, nitida, supra viridi-ænea, antennis nigris, basi piceo-fulvis, subtus nigro-picea, pedibus (femoribus posticis exceptis) piceo-fulvis; thorace subremote punctato, sulco basali recto, modice impresso; elytris sat fortiter punctato-striatis, sparse griseo-setosis.

Long. 1 lin.

Hab.—Brazil, St. Catherine.

Vertex impunctate; encarpæ narrow, linear, oblique, separated by the apex of the linear carina; eyes black; antennæ two-thirds the length of the body; three lower joints equal in length, four basal ones obscure fulvous, the first stained above with piceous. Thorax nearly twice as broad at the base as long; sides straight, slightly but dis-

tinctly converging from base to apex, anterior angle very obliquely truncate; basal margin sinuate on either side the medial lobe, the latter produced, rounded; upper surface finely but distinctly punctured; basal groove straight, moderately impressed, ending at either extremity in a large fovea; scutellum semiovate. Elytra broader than the thorax, convex; basilar space faintly elevated; surface very sparingly clothed with griseous hairs, regularly punctate-striate.

*Epitrix apicicornis.*

Oblongo-ovata, convexa, pallide picea, nitida, antennis, basi et apice exceptis, nigris; thorace distincte, subremote punctato; elytris fulvo-setosis, minus fortiter punctato-striatis.

Long. $\frac{4}{5}$ lin.

*Hab.*—Pará.

Head smooth, impunctate; encarpæ obsolete, interocular spaces smooth,* trigonate, contiguous at their inner angles; antennæ robust, more than half the length of the body; four lower and two upper joints piceous, the rest black, clothed with coarse, concolorous hairs. Thorax about one-third broader at the base than long; sides nearly straight, slightly converging, rounded and more quickly converging in front, anterior angles obliquely truncate, produced laterally into a distinct tooth; basal margin slightly sinuate on either side the medial lobe, the latter produced, subacutely rounded; surface finely and subremotely, but distinctly punctured; basal groove slightly flexuose, dilated posteriorly on the basal lobe, strongly punctured. Scutellum small, semiovate. Elytra clothed with long, suberect, fulvous hairs, regularly punctate-striate; interspaces plane, the basilar space on each elytron slightly elevated.

*Epitrix nucea.*

Ovata, convexa, nucea, nitida, subtus picea, antennis pedibusque fulvis; thorace tenuiter, subremote punctulato, sulco basali fere recto, profunde impresso, basi rugoso;

* The interocular spaces are each bounded externally by the inner margin of the eye, superiorly by the groove separating the front from the lower face, inferiorly by the antennal cavity, and internally either by the inner angle of the opposite space or by the carina; the encarpæ, when present, occupy a portion of the surface.

elytris sparse setosis, infra basin non depressis, regulariter punctato-striatis.

Long $\frac{7}{8}$ lin.

*Hab.*—Brazil, New Friburg.

Vertex smooth, impunctate; encarpæ small, trigonate, their inner angles nearly contiguous; clypeus trigonate, thickened towards the apex; carina not defined; antennæ two-thirds the length of the body, second and two following joints nearly equal in length. Thorax nearly twice as broad as long; sides parallel, bisinuate, anterior angle very obliquely truncate; basal margin sinuate on either side the medial lobe, the latter moderately produced, rotundate; upper surface sparingly and sub-remotely punctured; the basal groove nearly straight, its hinder border faintly sinuate in the middle, deeply impressed, its surface rugose-punctate. Elytra broader than the thorax, convex, not depressed below the basilar space, regularly punctate-striate, the interspaces plane.

*Epitrix segregata.*

Oblongo-ovata, convexa, nigra, nitida, pedibus piceis, tibiis tarsisque pallidioribus; supra metallico-cœrulea; antennis nigris, basi fulvo-piceis; thorace remote punctulato, sulco basali vix flexuoso, medio minus fortiter impresso; elytris sat fortiter punctato-striatis, sparse grisco-setosis.

Long. $1\frac{1}{4}$ lin.

*Hab.*—Bahia; collected by Mr. E. Reed.

Head elongate-trigonate; vertex smooth, impunctate; front impressed on either side near the upper and inner angle of the eye by one or two deep foveæ; encarpæ narrow, oblique, separated by the apex of the linear carina; antennæ nearly two-thirds the length of the body, less robust than in *E. cæruleata*; first, second and fourth joints equal in length, the third distinctly shorter; first and second incrassate, nearly equal in thickness; four lower joints obscure fulvo-piceous, the basal one darker above. Thorax nearly twice as broad at the base as long; sides nearly straight, slightly converging from base to apex, anterior angle very obliquely truncate, produced laterally into an obtuse tooth; basal margin with its medial lobe produced, subacutely rounded; upper surface nitidous, very finely and remotely punctured; basal groove strongly impressed on either side, less distinctly so in the

middle, subflexuose. Elytra broader than the thorax, ovate; sides subparallel, their apices conjointly angulate-rotundate; above very convex, distinctly but not strongly depressed below the basilar space, sparingly clothed with griseous hairs, strongly punctate-striate, interspaces on the outer margin thickened.

*Epitrix sejuncta.*

Anguste ovata, convexa, nigra, nitida, antennis pedibusque piceo-fulvis, femoribus posticis piceis; thorace subremote punctato, interstitiis lævibus, margine laterali minutissime denticulato; elytris griseo-setosis, sat fortiter punctato-striatis.

Long. $\frac{3}{4}$ lin.

*Hab.*—Pará.

Vertex smooth, impunctate; encarpæ narrow, linear, oblique, their inner angles not contiguous; antennæ more than half the length of the body, two or three upper joints stained with fuscous. Thorax nearly twice as broad as long; sides parallel, slightly rounded, the outer margin very finely denticulate, anterior angles thickened, obliquely truncate, produced laterally into an obtuse tooth; basal lobe produced, broadly rounded; upper surface finely and subremotely, but distinctly punctured, interspaces smooth and shining, impunctate; basal groove deeply impressed, slightly flexuous. Elytra broader than the thorax, rather coarsely punctate-striate, sparingly clothed with long suberect griseous hairs; interspaces on the outer disk indistinctly thickened.

*Epitrix serratula.*

Anguste ovata, convexa, nigro-picea, nitida, antennarum basi pedibusque (femoribus posticis exceptis) fulvis; thorace minute strigoso, sat fortiter punctato; margine laterali denticulato; elytris albido-setosis, fortiter punctato-striatis, interstitiis convexiusculis.

Long. $\frac{3}{4}$ lin.

*Hab.*—Pará.

Vertex minutely granulose-strigose; front impressed on either side with several large foveæ; interocular spaces large, smooth, trigonate; encarpæ linear, oblique, not contiguous; antennæ longer than half the body, six lower joints fulvous, the rest piceous. Thorax nearly twice as

broad as long at the base; sides straight and parallel, finely serrulate, anterior angles obliquely truncate, produced laterally into an ill-defined tooth; basal margin with its medial lobe moderately but distinctly produced, broadly rounded; surface very finely strigose, subremotely punctured; basal groove strongly impressed, not flexuose. Elytra broader than the thorax, ovate, convex, faintly depressed below the basilar space, strongly punctate-striate; interspaces obsoletely thickened on the inner disk, distinctly convex towards the apex and on the outer disk, sparingly clothed with long, suberect, whitish hairs.

*Epitrix torrida.*

Ovata, convexa, nigro-picea, nitida, antennis pedibusque (femoribus posticis exceptis) fulvis; thorace distincte, minus remote punctato, sulco basali flexuoso; elytris fulvo-setosis, piceo-fulvis, regulariter punctato-striatis, punctis piceis.

Long. $\frac{4}{5}$ lin.

*Hab.*—Brazil, New Friburg.

Vertex smooth, impunctate; encarpæ narrow, oblique, not contiguous; front impressed just above the apex of the carina with a short, longitudinal fovea; antennæ more than half the length of the body, entirely fulvous; third joint equal in length to the second. Thorax nearly twice as broad at the base as long; sides very slightly converging from base to apex; anterior angle obliquely truncate, produced laterally into a small tooth; basal margin faintly sinuate on either side the medial lobe, the latter produced, subangulate; upper surface rather finely but distinctly punctured; basal groove flexuose. Elytra sparingly clothed with short hairs, regularly punctate-striate, the interspaces plane, impunctate; basilar space slightly elevated.

*Epitrix cœruleata.*

Oblongo-ovata, convexa, nigra, nitida, cœruleo-micans; supra metallico-cœrulea, viridi-tincta, antennis nigris; thorace remote, tenuiter punctato, sulco basali modice impresso, flexuoso; elytris sparse setosis, sat fortiter punctato-striatis, interspatiis ad latera incrassatis.

Long. $1\frac{5}{6}$ lin.

*Hab.*—Brazil, New Friburg. I possess a specimen labelled Bogotá; this is probably a mistake.

Vertex smooth, impunctate, sometimes faintly strigose; front impressed on either side, close to the inner margin of the eye, with several large foveate punctures; encarpæ narrowly oblong, oblique, separated by the apex of the raised, linear carina; antennæ rather more than half the length of the body, robust, black; several of the basal joints piceous beneath; second and third joints short, equal in length. Thorax nearly twice as broad as long; sides nearly straight, slightly converging from base to apex; anterior angle broadly and very obliquely truncate, produced laterally into an ill-defined tooth; basal margin with its medial lobe produced, rounded; upper surface nitidous, remotely and finely but distinctly punctured. Elytra broader than the thorax, oblong, the sides subparallel, convex, very faintly depressed below the basilar space, very sparingly clothed with griseous hairs; surface strongly punctate-striate, interspaces very faintly wrinkled transversely on the inner disk, thickened and subcostate on the lateral margin.

*Epitrix cyanella.*

Ovata, convexa, nigra, nitida, pedibus piceis; supra cyanea, antennis basi fulvâ exceptâ nigris; thorace subremote tenuiter punctato; elytris sparse griseo-setosis, regulariter, minus fortiter punctato-striatis, interstitiis planis.

Long. $1\frac{1}{4}$ lin.

*Hab.*—Pará.

Vertex smooth, impunctate, front impressed on either side with a single, round fovea; encarpæ very narrow, oblique, not contiguous; carina narrow, elevated; antennæ more than half the body in length; four lower joints piceous, the rest black. Thorax nearly twice as broad as long; sides straight and parallel, the lateral margin, when seen under a strong lens, finely denticulate; anterior angles obliquely truncate, posterior laterally produced into an obtuse tubercle; basal margin with its medial lobe distinctly produced, obtusely angulate; upper surface convex, subremotely and finely punctured, interspaces shining, impunctate; basal groove shallow, subflexuose. Scutellum small, semiovate, piceous. Elytra broader than the thorax; sides subparallel, apex regularly rounded; above convex, faintly excavated below the basilar space, regularly but not very strongly punctate-

striate; interspaces plane, impunctate, sparingly clothed with suberect whitish hairs.

Genus Plectroscelis, Redtenb.

*Plectroscelis ingenua.*

Ovata, convexa, cuprea, nitida, femoribus posticis extrorsum, pectore, abdomine antennisque nigris, his basi pedibusque fulvis; thorace subcrebre foveolato-punctato, interstitiis lævibus; elytris fortiter foveolato-striatis, basi prope suturam confuse punctatis, interstitiis lævibus, prope marginem exteriorem subcostatis.

Long. $1\frac{1}{6}$ lin.

*Hab.*—China; collected by Mr. Lewis.

Lower portion of face clothed with white hairs, vertex and front distinctly punctured, the latter separated from the face by a distinct groove; carina and encarpæ entirely obsolete; antennæ slender, three lower joints pale fulvous, more or less stained with piceous. Thorax nearly twice as broad as long; sides straight and parallel at the base, obliquely converging towards the apex; anterior angle thickened, obliquely truncate, hinder angle subacute; above strongly foveolate-punctate; interspaces smooth and shining. Elytra more strongly punctured than the thorax, regularly foveolate-striate, the short interspace next the suture irregularly punctured, the other smooth and shining; those near the outer margin subcostate.

*Plectroscelis simplicifrons.*

Ovata, convexa, nigra, nitida, pedibus (femoribus posticis exceptis) antennisque fulvis, his extrorsum infuscatis; fronte lævi, impunctatâ; thorace sat remote punctato; elytris fortiter punctato-striatis, striis ad apicem subsulcatis, interstitiis minute punctatis; femoribus posticis valde incrassatis.

Long. $\frac{3}{4}$ lin.

*Hab.*—China, Kin Kiang; collected by Mr. Lewis.

Vertex and front smooth, impunctate, the latter separated from the lower part of the face by a distinct groove; antennæ more than half the length of the body, pale fulvous, the seven outer joints slightly stained with fuscous. Thorax nearly twice as broad as long at the base; sides nearly straight, slightly converging, anterior angles oblique, thickened; disk convex, subremotely punc-

tured. Elytra coarsely punctate-striate, the striæ subsulcate towards the apex: interspaces plain, faintly convex posteriorly, each impressed with an irregular row of fine punctures. Hinder thighs strongly thickened, pitchy-black.

*Plectroscelis bella.*

Ovata, convexa, nitida, subtus nigra, pedibus (femoribus posticis piceis exceptis) sordide fulvis; supra saturate metallico-cœrulea, antennis pallide fulvis, extrorsum piceis; fronte remote punctatâ; thorace distincte granuloso, sat fortiter, subremote punctato; elytris ad apicem attenuatis, fortiter punctato-striatis, interstitio prope suturam confuse punctato.

Long. 1 lin.

*Hab.*—China, Kin Kiang; collected by Mr. Lewis.

Clypeus coarsely punctured, sparingly clothed with adpressed hairs; encarpæ and carina obsolete; front and vertex finely granulose, remotely punctured; antennæ scarcely more than half the length of the body, the seven outer joints piceous, the 5th and 6th paler than the succeeding ones. Thorax nearly twice as broad as long; sides straight and parallel, the anterior angles thickened, obliquely truncate; disk distinctly granulose, deeply but subremotely punctured. Elytra deeply and coarsely punctate-striate, the interspace next the suture covered with coarse irregularly placed punctures; the other interspaces smooth (when viewed under a deep lens, minutely reticulate-strigose). Hinder thighs strongly thickened.

*Plectroscelis philoxena.*

Anguste ovata, convexa, cuprea, nitida, antennis basi, pedibusque fulvis, illis extrorsum femoribusque posticis nigro-piceis; vertice subcrebre foveolato-punctato, interstitiis granulosis; thorace subcrebre foveolato, interstitiis lævibus, prope apicem obsolete granulosis; elytris foveolato-striatis, interstitiis planis, iis prope latera convexis, basi prope suturam confuse foveolatis.

Long. $\frac{3}{4}$ lin.

*Hab.*—Kin Kiang; Lewis.

Vertex rather closely foveolate-punctate; interspaces finely granulose, front separated from the lower part of the face by a fine groove; six lower joints of antennæ fulvous, the rest black; 2nd more than half the length of

the 1st, moderately thickened. Thorax nearly twice as broad as long; sides nearly parallel, slightly rounded, converging near the apex, anterior angle acute; above transversely convex, deeply foveolate-punctate; interspaces smooth, those near the apex finely granulose. Elytra deeply foveolate-striate; interspaces smooth, impunctate, those on the outer border convex; short interspace next the suture impressed with a number of punctures, equal in depth and size to those of the striæ themselves.

*Plectroscelis discreta.*

Ovata, convexa, cuprea, nitida, antennis pedibusque sordide fulvis, illis extrorsum infuscatis, femoribus posticis piceis; vertice granuloso-strigoso; thorace strigoso, ruguloso, subcrebre aciculato-punctato; elytris fortiter punctato-striatis, interstitiis remote punctatis, leviter convexiusculis, ad latera subcostatis.

Long. 1 lin.

*Hab.*—Kin Kiang; Mr. Lewis.

Head subtrigonate; vertex thickened, front separated from the lower face by a deep groove; finely granulose-strigose; carina oblong, slightly thickened; eyes large, bordered above by a deep groove; antennæ pale fulvous, four upper joints fuscous; 2nd joint moderately thickened, two-thirds the length of the 1st. Thorax nearly twice as broad as long: sides obliquely converging from base to apex, anterior angle produced, obtuse; above transversely convex, nitidous, finely rugose-strigose, impressed with shallow aciculate punctures. Elytra broader than the thorax, narrowed towards the apex, strongly punctate-striate; interspaces finely but distantly punctured, slightly convex on the inner disk, subcostate near the outer margin.

Very nearly allied to *P. granulosa*, mihi, but separated from that insect by the four anterior legs being entirely fulvous, as well as by the distinctly larger front.

*Plectroscelis granulifrons.*

Anguste ovata, convexa, cuprea, nitida, pedibus antennisque fulvis, his extrorsum femoribusque posticis piceis; vertice granuloso, impunctato; thorace subcrebre, minus fortiter punctato; elytris fortiter punctato-striatis, interspatiis convexiusculis, ad latera subcostatis.

Long. 1 lin.

*Hab.*—China; Mr. Lewis.

Head granulose-strigose; front separated from the face by a deep groove; eyes large, bordered above by a sunken orbit, encarpæ obsolete; antennæ with the six lower joints fulvous, the rest piceous. Thorax nearly twice as broad as long; sides straight, obliquely narrowed from base to apex, the anterior angle thickened, obliquely truncate; upper surface distinctly but not very strongly punctured, the interspaces smooth and shining. Elytra ovate, convex, strongly punctate-striate; interspaces slightly convex on the inner disk, those near the outer border subcostate.

Very nearly allied to the preceding, and possibly a variety.

*Plectroscelis compressipes.*

Ovata, convexa, supra obscure cuprea, subnitida, subtus picea, tibiis compressis, tarsis antennisque fulvis; thorace punctulato, minute granuloso; elytris fortiter punctato-striatis, striis sulcatis, interstitiis convexiusculis, iis ad latera convexis.

Long. 1 lin.

*Hab.*—Guinea (Camaroons).

Head subtrigonate; vertex subopaque; front separated from the face by a deep groove, which curves upwards at either end, and runs parallel for some distance with the inner margin of the eye; space between this groove and the eye, together with the clypeus on either side the carina, impressed with round, deep foveæ; carina broad, oblong, its lower extremity angulose, its surface flattened; encarpæ remote, linear, oblique, their inner and outer margins not defined. Thorax nearly twice as broad at the base as long; sides nearly straight, converging from base to apex, rather more quickly converging towards the anterior angles; the latter thickened, subacute, hinder angles acute; surface minutely granulose-punctate, finely but not very closely punctured. Elytra strongly punctate-striate, interspaces smooth and shining, impressed with a few minute punctures (visible only under a deep lens), moderately convex on the inner disk, strongly convex and almost costate towards the outer border. Tibiæ compressed.

*Plectroscelis australica.*

Anguste ovata, convexa, cuprea, nitida, subtus cupreo-ænea, pedibus (femoribus posticis æneis exceptis), anten-

nisque sordide fulvis, his extrorsum piceis; capite crebre punctato, thorace sat profunde, subcrebre punctato, interspatiis ad latera elevato-strigosis; elytris fortiter punctato-striatis, interstitiis ad suturam planis, iis ad latera convexis.

Long. 1—1¼ lin.

*Hab.*—Western Australia (Rockhampton).

Head deeply and closely punctured; clypeus sparingly clothed with suberect hairs, less closely punctured than the vertex; front separated from the face by a deep, curved groove, which runs obliquely upwards on either side to the inner border of the eye; encarpæ and carina obsolete. Thorax nearly twice as broad at the base as long; sides slightly rounded, slightly converging in front, anterior angle acute; surface deeply and coarsely punctured, the interspaces nitidous, towards the sides faintly elevate-strigose. Elytra strongly punctate-striate, interspaces plane on the inner disk, convex and subcostate towards the lateral margin; short interspace next the suture impressed with a single row of punctures, equal in size to those on the striæ themselves.

## Genus Dibolia, Latr.

### *Dibolia intermedia.*

Ovata, convexa, nitida, subtus nigro-picea, femoribus posticis validis, cœruleo-micantibus; supra cyanco- aut cœruleo-metallica, antennis nigris, basi fulvis; thorace sat fortiter punctato; angulis anticis incrassatis, extrorsum paullo productis; elytris substriatim punctatis.

Long. 1⅓ lin.

*Hab.*—South Africa (Graham's Town).

Vertex and front moderately convex, finely and distantly punctured; clypeus transversely trigonate, its upper angle produced to form the short, oblong carina; antennæ scarcely half the length of the body; five lower joints fulvous; sixth, seventh and eighth piceous at the base, their upper halves black; three outer joints entirely black; second, fourth and fifth equal in length, the third slightly shorter. Thorax more than twice as broad as long; sides rounded and converging from base to apex, anterior angle thickened, slightly produced in front, its apex obtuse; upper surface distinctly but not very closely punctured. Scutellum smooth, trigonate. Elytra rather

broader than the thorax, slightly attenuated towards the apex, convex, rather strongly punctured. Hinder tibiæ nearly equal in length to the femora, slightly recurved, channelled above; the edges of the groove serrate.

*Dibolia Trimeni.*

Anguste ovata, convexa, nitida, subtus nigra, femoribus posticis viridi-æneis; supra viridi-ænea, antennis (basi fulvâ exceptâ) nigris; thorace subremote punctulato, lævissime ruguloso, lateribus rotundato-angustatis, angulis anticis antrorsum paullo productis, apice obtusis; elytris tenuiter subseriatim punctatis, interstitiis tenuissime irregulariter strigoso-rugulosis.

Long. $1\frac{1}{2}$ lin.

*Hab.*—Cape of Good Hope; collected by Mr. Trimen.

Vertex and front finely but not closely punctured; face between the eyes impressed with several large, round punctures, which are sometimes absent; carina short, oblong; clypeus transversely trigonate; antennæ more than half the length of the body; four lower joints obscure fulvous, 5th and 6th, together with the upper surface of the basal joint, piceous, the five outer joints black. Thorax nearly three times as broad as long; sides rounded and converging from base to apex, the anterior angle produced in front, thickened, its apex obtuse; upper surface subremotely punctulate, the interspaces faintly rugulose. Elytra finely punctured, finely and irregularly rugose-strigose. Hinder tibiæ recurved below the middle, channelled above, edges of the groove serrate. Third joint of all the tarsi, together with the claws, obscure piceous.

The irregular surface of the thorax and elytra (visible only under a good lens) will separate this insect from *D. intermedia*.

*Dibolia gravida.*

Breviter ovata, convexa, nitida, subtus nigra, femoribus posticis viridi-cyaneo micantibus; supra viridi-cyanea, antennis (basi fulvâ exceptâ) nigris; thorace subremote punctato, lateribus fere rectis, angulis anticis incrassatis, oblique truncatis; elytris subseriatim punctatis.

Long. $1\frac{1}{4}$ lin.

*Hab.*—Guinea (Camaroons).

Vertex finely and remotely punctured; front flat, impressed on either side, within the eye, with a single, large,

round puncture; encarpæ obsolete; carina short, linear; clypeus trigonate; antennæ robust, rather more than half the length of the body; three lower joints, together with the base of the 4th, obscure fulvous, the basal one stained above with piceous; 2nd and 3rd short, equal in length; 4th distinctly longer than the 3rd. Thorax more than twice as broad as long; sides nearly straight, converging from base to apex, anterior angle thickened, obliquely truncate; upper surface distinctly but subremotely punctured. Elytra broader than the thorax, the shoulders very obliquely rounded; above convex, rather strongly punctured. Hinder tibiæ robust, about equal in length to the femora, recurved towards the apex, channelled above; edges of the groove serrate.

The broadly ovate form, together with the obliquely truncate anterior angles of the thorax, will at once distinguish this species from the two others described in the present paper.

## Genus Psylliodes, Latr.

### *Psylliodes Novæ Caledoniæ.*

Elongato-ovata, convexa, cupreo-ænea, nitida, antennis nigris, basi fulvis; subtus nigro-picea, pedibus pallide piceis, femoribus posticis dorso obscuris, thorace distincte punctato; elytris regulariter punctato-striatis, interspatiis planis.

Long. $1\frac{1}{4}$ lin.

*Hab.*—New Caledonia.

Vertex impunctate, when seen under a deep lens obsoletely wrinkled; eyes large, black; antennæ more than half the length of the body; three lower joints equal in length, fulvous, the 4th and 5th obscure piceous, the rest black; encarpæ oblique, ill-defined above. Thorax about one-half broader than long; sides nearly straight, slightly converging from base to apex, anterior angles obliquely truncate, produced laterally into a small tooth; basal margin oblique on either side, obsoletely sinuate; upper surface distinctly but finely and not very closely punctured. Elytra broader than the thorax, very obliquely rounded at the shoulders, converging towards the apex; regularly but not strongly punctate-striate; interspaces plane. Hinder tibia armed on its upper surface, near the apex, with an ill-defined tooth; apical process one-third the length of the whole tibia, its lateral border denticulate.

*Psylliodes Breweri.*

Anguste ovata, convexa, supra cuprea, nitida, antennis nigris, basi fulvis; subtus nigra, pedibus piceis, femoribus posticis nigro-piceis, æneo-micantibus, tibiis tarsisque picco-fulvis; thorace fortiter punctato, interstitiis leviter elevato-reticulatis; elytris fortiter punctato-striatis, striis sulcatis, interspatiis ante medium convexiusculis, pone medium convexis.

Long. $1\frac{1}{3}$ lin.

*Hab.*—Western Australia; collected by Mr. Brewer, after whom I have named it.

Head triangular; clypeus sparingly clothed with whitish hairs; carina broad, ill defined; encarpæ oblique, not contiguous, their upper margins ill defined; antennæ half the length of the body, 1st, 2nd and 4th joints equal in length, the 3rd rather shorter, three lower joints fulvous, 4th and 5th piceous, the rest black. Thorax one-third broader than long; sides nearly straight, slightly converging, feebly bisinuate, anterior angles broadly and obliquely truncate, slightly thickened; disk deeply and coarsely punctured, interspaces faintly elevated, reticulate. Elytra oblong, attenuated at the apex; strongly punctate-striate, the striæ sulcate; interspaces shining, finely and remotely punctured, wrinkled transversely at the base near the suture, slightly convex before the middle, strongly convex and almost costate towards the apex and on the outer margin. Outer surface of hinder tibiæ narrowly canaliculate, armed with a short, obtuse tooth; apical process one-third the length of the whole tibia, its lateral edges pectinate.

*Psylliodes quadridentata.*

Breviter ovata, convexa, cuprea, nitida, pedibus antennisque piceo-fulvis, his extrorsum infuscatis, femoribus posticis piceis; thorace sat crebre, rude punctato; elytris fortiter punctato-striatis, interstitiis ad latera convexiusculis; tibiis posticis extus canaliculatis, ad apicem quadridentatis.

Long. 1 lin.

*Hab.*—Western Australia; Brewer.

Head coarsely punctured; encarpæ and carina obsolete; antennæ not half the length of the body, five outer joints piceo-fuscous, the six lower ones obscure fulvous. Thorax

one-half broader than long; sides moderately rounded, slightly converging from base to apex, anterior angles obliquely truncate, produced laterally into a distinct tooth, hinder angles acute; above convex, coarsely and closely punctured, subrugose. Elytra broader than the thorax, slightly dilated posteriorly, strongly punctate-striate, the striæ less strongly punctured and less regular towards the apex; interspaces on the outer disk convex. Hinder tibiæ short, robust, the outer surface canaliculate and armed on either side, below the middle, with two strong teeth; apical process rather more than one-fourth the length of the tibia, broad, concave, its sides entire.

## XIX. *Descriptions of new species of* Cryptoceridæ, *belonging to the genera* Cryptocerus, Meranoplus, *and* Cataulacus. By Frederick Smith.

[Read 4th October, 1876.]

Having published three papers on this remarkable group of insects in the Transactions of the Society, I offer a fourth, in which twelve new species are described, of one of which I fortunately have obtained all the sexes, figures of which are given in the plate that illustrates the paper.

In previous publications I have altogether described thirty-six species, those described in the present paper making the total number forty-eight.

In a former paper I gave some account of the habits of these insects. For that information I was partly indebted to the account published by Professor Lund, who describes the manner in which they capture their prey; this, he tells us, is similar to that of Hunting Spiders,—by springing upon it. For the more interesting details, however, I was indebted to Mr. H. W. Bates, who, when resident in Brazil, observed these insects with great attention. He informed me that *Cryptocerus* constructed its burrows in decaying trees, its colonies not being numerous; consisting, in the nests examined, of about a dozen females, a few males, and the workers, numbering about the same as the females.

Of the habits of the genera *Meranoplus* and *Cataulacus* no information had at that time been obtained. I have now the satisfaction of giving some account of the habit of a species of *Meranoplus*, *M. intrudens*, observed by Mr. John Monkhouse Hutchinson, resident in the Weenen district of Natal, South Africa. This species makes use of the thorns of a species of acacia, in which it constructs its formicarium; the thorns are from four to five inches in length, and, at the distance of about half an inch from the pointed end, a small round hole is made by the ants, which serves as ingress and egress to and from the nest. The thorns contain a kind of spongy pith, in which the channels and chambers of the nest are constructed. A remarkable fact in connexion with this insect is, that

when the thorns, forwarded in a letter, were received by Mr. Hutchinson's mother, some of the ants were still alive and active, after having been at least six weeks on their journey; so that, calculating from the time the thorns were collected in the Weenen district of Natal, at a spot one hundred and twenty miles from the coast, in all probability the ants had been two months in reaching their destination, thus showing a wonderful tenacity of life in these insects.

Subsequent to the reception of the first parcel of thorns a second supply has been received, in which it was found that many of the ants were still alive. Two of these thorns were sent to me, when, on cutting one open, I had the pleasure of finding the three sexes. Figures of each are given in the plate that illustrates this paper.

One circumstance that I observed may possibly, to some extent, account for the fact of some of the ants being alive when they reached England. I noticed that the abdomen of several specimens was mutilated, a hole being observable on the upper surface of them. This gave rise to the suggestion in my mind of the possibility of the ants having fed upon each other. This is, however, a matter of entire uncertainty; but that they could easily gnaw holes through the integument of the abdomen is proved by the fact of their perforating the thorns, which are of a much harder consistency.

Among the thorns sent, one or more were tenanted by a distinct species of ant, *Pseudomyrma natalensis*. These also were alive when received, the majority being females.

Previous to finding the sexes of *Meranoplus intrudens* in the acacia thorn, I was unacquainted with the male of any species of that genus; it was, therefore, very gratifying to find that in this genus of *Cryptoceridæ* the male sex does not differ in form so entirely from the others as it is found to do in the genus *Cryptocerus;* on the contrary, it greatly resembles the worker: it has however ocelli, which the worker has not. The female is distinguished by an elongated abdomen, a more ovate form of thorax, and having, like the male, both wings and ocelli.

An interesting circumstance connected with the opening of the acacia spine that contained the three sexes of *Meranoplus*, was that of my finding with them a small bee belonging to the exotic genus *Allodape*. This genus of bees is closely allied to that of *Ceratina*, the habit of the latter being to perforate the pith of dead bramble stems.

It may, therefore, be reasonably inferred that the habit of *Allodape* is similar, and that these bees perforate the acacia thorns and use them as their nidus in the same manner as *Ceratina* uses the bramble stems. The bee that was found might possibly have entered the thorn, tenanted by the ant, mistaking it for that which contained her own nest.

## Genus Cryptocerus, Latr.

### 1. *Cryptocerus fervidus.*

Female.—Length 5½ lines. Chestnut-brown, the abdomen with an indistinct pale macula on each side at its base and an ovate one placed obliquely at its apex. The head rather longer than broad; slightly convex above, with the lateral margins raised; the posterior margin of the vertex obliquely truncate; two minute tubercles on the vertex in front of the truncation; the flagellum of the antennæ dark fuscous. The thorax of the same width as the head; the prothorax oblique, with the margins sharp and slightly raised; behind the insertion of the wings narrowed, and with a short spine on each side of the metathorax posteriorly; the scutellum semicircular. The abdomen oblong; the sides parallel, the anterior margin incurved, with the lateral angles slightly rounded; the first node of the peduncle subquadrate, slightly narrowed posteriorly, the second node transverse and with a short spine at the anterior angles. (Fig. 1, ♀. Pl. XI.)

*Hab.*—Rio.

### 2. *Cryptocerus gibbosus.*

Worker.—Length 3—3½ lines. Black, punctured, each puncture with a pale shining seta; the lateral margins of the head broadly rufo-testaceous anteriorly; also a rufo-testaceous spot at the basal angles of the abdomen. Head large, wider than the thorax; longer than broad, the lateral margins raised, convex above; two small tubercles on the vertex. The prothorax transverse, and having a short pale spine at the anterior lateral angles, with a transverse, sharp, raised margin posteriorly; the mesothorax semicircular; the metathorax produced laterally and forming a blunt spine, from which it becomes much narrower. Abdomen heart-shaped; the nodes of the peduncle

transverse and each forming a spine that curves backwards. (Fig. 2, ♀. Pl. XI.)

*Hab.*—Mexico.

3. *Cryptocerus jucundus.*

Worker.—Length 2 lines. Black, punctured, each puncture having a pale shining seta; the head oblong and narrowed anteriorly; the lateral margins before the eyes broadly pale rufo-testaceous; the antennæ of the same colour. Thorax narrower than the head; transverse anteriorly, slightly arched; the lateral angles acute, gradually narrowed to the metathorax, with the margins narrowly pale testaceous; about the middle, slightly contracted, with a minute tooth in the middle of the contraction; the lateral margins of the metathorax with two minute teeth; the tibiæ and tarsi pale rufo-testaceous. Abdomen heart-shaped, pale rufo-testaceous at the base; the nodes of the peduncle transverse and produced laterally into a pale spine, curved backwards. (Fig. 3, ♀. Pl. XI.)

*Hab.*—Mexico.

4. *Cryptocerus varians.*

Worker.—Length 2 lines. Varying in colour from pale yellow to black-brown; in the dark specimens the margins of the head are anteriorly reddish, as are also the legs, antennæ, and sides of the abdomen towards the base. Head and thorax punctured; the latter oblong, with a transverse suture a little beyond the middle; the anterior lateral angles acute; the margins before the suture with two blunt teeth; behind the suture the margins are first produced into a small sharp tooth, and then suddenly narrowed to the apex of the metathorax. Abdomen oblong-ovate, deeply emarginate at the base; the sides narrowly margined. (Fig. 4, ♀. Pl. XI.)

*Hab.*—Cuba.

5. *Cryptocerus pallidicephalus.*

Female.—Length 3½ lines. Black, with the head, tibiæ and the base of the abdomen laterally, and a subovate macula on each side near its apex, ochraceous. Head oblong, rather widest in front, the margins raised, dish-shaped; covered with large shallow punctures; the eyes and head beneath black; the antennæ, with the scape, pale ferruginous, and the flagellum black. Thorax punctured,

each puncture with a pale seta; the anterior margin of the prothorax arched, the lateral angles acute and pale testaceous; the sides curved, narrowed posteriorly; the metathorax emarginate, forming a blunt tooth at the lateral angles; the tarsi ferruginous. Abdomen oblong-ovate and deeply emarginate at the base; the first node of the peduncle oblong, and having a small tooth on each side; the second node transverse, with a short curved tooth on each side at the base. (Fig. 5, ♀. Pl. XI.)

*Hab.*—Mexico.

Type in the British Museum.

### 6. *Cryptocerus maculatus.*

Female.—Length 2¾ lines. Black, punctured, each puncture with a pale shining seta; the abdomen with two basal and two sub-apical pale yellow maculæ. Head oblong, with the lateral margins raised. Thorax oblong; the prothorax with the anterior portion transverse and declining forwards; the anterior margin arched, with the lateral angles acute; narrowed to the metathorax, which is emarginate and toothed laterally. Abdomen deeply emarginate at the base; the basal maculæ triangular, the apical ones ovate; the first node of the peduncle subglobose; the second wider than the first, anteriorly produced laterally into a curved tooth, from which it is narrowed posteriorly. (Fig. 6, ♀. Pl. XI.)

*Hab.*—Bahia. Type in the British Museum.

### 7. *Cryptocerus fenestralis.*

Female.—Length 5¾ lines. Black; head and thorax strongly punctured and slightly shining; the abdomen delicately shagreened, giving it a silky texture, slightly shining. Head oblong, convex, the lateral margins nearly parallel to the eyes; in front of them the head slightly widens and the margins are slightly raised; the posterior margin has the middle nearly straight, and on each side it is emarginate, the lateral angles being acute. The prothorax transverse and produced laterally into a stout tooth or spine; the sides rounded to the metathorax, which is deeply emarginate, and has a stout spine on each side, which diverges slightly outwards. Wings brown, with the first submarginal cell hyaline. Abdomen oblong; the

sides parallel, rounded at the apex, and slightly emarginate at the base.

*Hab.*—St. Paulo (Brazil).

In the British Museum; from Mr. Bates' collection.

8. *Cryptocerus basalis.*

Female.—Length 5½ lines. Shining black; head very finely punctured; thorax and nodes of the peduncle of the abdomen much more strongly so; the base and apex of the abdomen finely punctured. Head convex above, as broad as long; the margins before the eyes raised, anteriorly emarginate in the middle; a circular fossulet in the middle towards the anterior margin; two small tuberculate spines at the posterior margin, about one-third of the width of the margin apart; the lateral angles acute. Thorax a little longer than the head; the anterior margin transverse, nearly straight, being very slightly arched; the lateral angles acute, subspinose; gradually narrowed to the metathorax; the metathorax transverse above and with the lateral margins produced into an acute angle or tooth; the posterior margin emarginate; the truncation concave, smooth and shining. Abdomen oblong-ovate, emarginate at the base and having on each side a marginal, large, subovate, yellow macula; the disk of the abdomen very smooth and shining.

In the British Museum.

*Hab.*—Brazil (Chontales).

9. *Cryptocerus discocephalus*, Smith.

Female.—Length 3¼ lines. Dark reddish-brown, the abdomen of a lighter tint. Head concave above, oblong, dish-shaped and punctured. Thorax about the same length as the head, covered with shallow punctures; obliquely truncate towards the head, the margin of the truncation raised; the sides, before the wings, nearly parallel; behind the wings narrowed to the metathorax; the metathorax transverse, with the lateral margins slightly rounded, the lateral angles acute; wings fusco-hyaline; the legs bright red-brown. Abdomen oblong, emarginate at the base, very finely shagreened; the nodes of the peduncle rugulose, the first subovate, the second transverse, with a tooth at the lateral angles of the base.

*Hab.*—Villa Nova and Santarem, Brazil; St. Vincent.

In the British Museum, from the collection of Mr. H. W. Bates.

The large worker of this species was described and figured in the second volume of the Transactions of this Society, Pl. XX. fig. 2. Mr. Bates subsequently sent specimens of both the sized workers, obtained from the nest; the small worker has a differently shaped head to the larger worker; the head is nearly flat above, slightly convex, punctured, with the margins pale reddish-brown, widest in the middle. The thorax is differently shaped anteriorly, not being obliquely inclined to the head; the abdomen and nodes of the peduncle are the same in form as in the larger worker. The male and the large and small worker are figured in the Catalogue of Formicidæ, published by the trustees of the British Museum, Part VI. Pl. XI. fig. 1, ♂; 2, worker major, 3, worker minor.

## Genus Meranoplus, Smith.

### 1. *Meranoplus intrudens.*

Female.—Length 3 lines. Opaque-black; the scape of the antennæ, the base and apex of the flagellum, tips of the femora, the tibiæ, the anterior tarsi, and the apical joints of the intermediate and posterior pairs, light ferruginous; the wings flavo-hyaline, the nervures pale rufo-testaceous. Head, thorax and nodes of the peduncle with rugose confluent punctures; the head longer than broad, slightly narrowed before the eyes; the posterior margin of the vertex broadly emarginate. The anterior margin of the prothorax arched; the thorax about the same length as the head, narrowed behind the insertion of the wings; the metathorax with two blunt spines. Abdomen oblong and very finely shagreened; emarginate at the base and rounded at the apex.

Worker.—Only differs from the female in being rather shorter, and in the form of the thorax, as will be seen by the figure; the abdomen shorter, with the sides less parallel.

Male.—Length $2\frac{1}{2}$ lines. The colour and sculpture as in the female. Head wider than the thorax, much narrowed before the eyes; the lateral angles of the posterior margin of the vertex subspinose. Thorax anteriorly arched; the mesothorax with two curved, deep, broad channels that curve inwardly and unite at the base of the scutellum; the scutellum, the spines of the metathorax, and the nodes of the peduncle of the abdomen, grooved

longitudinally; the wings as in the female; the abdomen subovate, slightly emarginate at the base and pointed at the apex. (Fig. 7, ♀; 7*a*, ♂. Pl. XI.)

*Hab.*—Weenen District, Natal.

This species was discovered by Mr. John Monkhouse Hutchinson, inhabiting the thorns of a species of acacia. Some of the specimens of the workers have the legs more or less ferruginous.

2. *Meranoplus vestigator.*

Worker.—Length 2¾ lines. Head, thorax and legs brown-black; abdomen black. Head subglobose, shining, and with a few irregular carinæ; antennæ reddish-brown, palest at the apex. Thorax short, not longer than the head, longitudinally rugose-striate; the anterior margin arched, the lateral angles acute and subdentate; narrowed posteriorly; the metathorax with two long acute spines; the legs pale at the base of the femora; the tarsi pale rufo-testaceous. Abdomen heart-shaped, smooth, shining, and with scattered erect setæ; the first node of the peduncle wedge-shaped, the second subglobose, both rugose. (Fig. 8, ♀. Pl. XI.)

*Hab.*—Matabello, Eastern Archipelago.

Type in the British Museum.

3. *Meranoplus attenuatus.*

Female.—Length 2½ lines. Black and shining; the head rather strongly punctured; the ocelli distinct, placed in a triangle on the vertex; the apical joint of the antennæ rufo-testaceous. Thorax oblong, longitudinally roughly striated; the metathorax deeply emarginate, forming two lateral stout teeth; wings wanting; femora much attenuated at the base, and swollen in the middle; the anterior tibiæ and tarsi, and the apical joints of the two posterior pairs, rufo-testaceous. Abdomen oblong-ovate, striated at the base, the apex with scattered pale hairs; the first node of the peduncle with large punctures, and much narrower than the second, which is longitudinally striated. (Fig. 9, ♀. Pl. XI.)

*Hab.*—Pará.

Type in British Museum.

4. *Meranoplus puncticeps.*

Worker.—Length 2 lines. Black and shining; the

head subovate, punctured; antennæ pubescent, the apex testaceous; the mandibles and a small space between the antennæ striated. Thorax oblong, deeply constricted at the base of the metathorax, which is longitudinally striated, deeply emarginate, and with two longish acute spines; the anterior portion of the thorax strongly longitudinally punctate-striate; the femora much attenuated at their base and swollen in the middle; the apical joints of the tarsi testaceous. Abdomen ovate, longitudinally striated at the base; the nodes of the peduncle deeply striated, the first narrower than the second, both subovate. (Fig. 10, ☿. Pl. XI.)

*Hab.*—Pará.

Type in British Museum.

This is very probably the worker of *Meranoplus attenuatus;* both are from the same locality, and were received at the same time.

## Genus Cataulacus, Smith.

### 1. *Cataulacus hispidus.*

Worker.—Length $2\frac{1}{4}$ lines. Black; the head, thorax and nodes of the peduncle of the abdomen rugose; the apical portion of the scape, the apex of the flagellum, the anterior tibiæ and tarsi, and the apex of the intermediate and posterior tibiæ above, pale ferruginous. Head with the sides rounded, narrowed anteriorly, with the anterior margin very slightly emarginate, nearly straight; the margin of the vertex also slightly emarginate and crenulated; convex above, and longitudinally and irregularly rugose-striate. Thorax sculptured similarly to the head; the sides spinulose, narrower than the head, widest anteriorly; the metathorax with two stout spines; the legs rugose, covered with short, minute spines, each spine terminating with a pale seta; the spines on the margin of the thorax have also terminal white setæ as well as the nodes of the peduncle of the abdomen. Abdomen ovate, slightly emarginate at the base; the base with a number of irregular longitudinal carinæ; beyond, it is very delicately carinated, and sprinkled with minute, erect pale setæ. (Fig. 11, ☿. Pl. XI.)

*Hab.*—Singapore.

## DESCRIPTION OF PLATE XI.

Fig. 1. Cryptocerus fervidus, ♀.
2. „ gibbosus, ☿.
3. „ jucundus, ☿.
4. „ varians, ☿.
5. „ pallidicephalus, ♀.
6. „ maculatus, ♀.
7. Meranoplus intrudens, ♀.
7*a*. „ „ ♂.
8. „ vestigator, ☿.
9. „ attenuatus, ♀.
10. „ puncticeps, ☿.
11. Cataulacus hispidus, ☿.

# XX. *Synopsis of British* Hemiptera-Heteroptera. By Edward Saunders, F.L.S. Part III.

[Read 2nd August, 1876.]

## MICROPHYSIDÆ.

A. Second joint of antennæ considerably longer than fourth .. .. .. .. .. .. *Microphysa.*

AA. Second joint of antennæ not longer than fourth .. *Myrmedobia.*

### Microphysa.

A. ♂ moderately robust; cuneus dull; embolium reddish; ♀ brown, dull, robust; wing-cases covering half the body or more .. .. .. .. *pselaphiformis.*

AA. ♂ very slender; embolium dark; cuneus red; ♀ bright red, with the body black; shining and elongate; wing-cases not covering the body at all *elegantula.*

1. *pselaphiformis*, West. Fig. Doug. & Scott, pl. xvi. fig. 3, ♂ and ♀.

♂ Head, thorax and antennæ black-brown, the ocelli red. Thorax deeply channelled across the middle, the sides nearly straight. Elytra paler brown, the embolium red. Cuneus pale at the base, outwardly narrowly red; membrane dusky. Antennæ: 3rd joint two-thirds as long as 2nd, 4th slightly longer than 3rd. Femora brown; apices, tibiæ and tarsi paler.

♀ dull brown, much widened posteriorly, covered with a fine short golden pubescence; head on the vertex red. Thorax with a strongly raised rib across the middle. Elytra covering about half the body, slightly paler on the lateral margins; body darker than the elytra, and much dilated. Legs slightly paler than in the ♂.

Length, ♂, 1 line; ♀, ¾ line.

Under bark, on palings, &c.

2. *elegantula*, Baer. Fig. Dougl. & Scott, Brit. Hem. pl. xvi. fig. 2, ♂ and ♀.

Much longer and narrower than the preceding. ♂ very delicate and shining. Head red, thorax reddish-brown, sides sinuate. Elytra brown, with the base and apex above the cuneus paler; cuneus bright red, membrane

dusky; legs red, antennæ brown. ♀ bright red, elongate, the dilated body shining black; antennæ dusky towards the apex.

Length, ♂, 1 line; ♀, $\frac{3}{4}$ line.

On trees and old palings; amongst lichens, &c.

## Myrmedobia.

*Pseudophleps*, Dougl. & Scott.

| | | |
|---|---|---|
| I. ♂, sides of the thorax nearly straight, not dilated anteriorly. ♀ with the sides of thorax not reflexed. | | |
| a. | ♂, 2nd joint of antenna distinctly longer than 3rd .. .. .. .. .. .. ♀, elytra rudimentary .. .. .. .. | *inconspicua.* |
| b. | ♂, 2nd and 3rd joints of antenna subequal .. ♀, elytra covering the body .. .. .. | *coleoptrata.* |
| II. ♂, sides of thorax sinuate, much dilated in front .. ♀, sides of thorax reflexed in front .. .. .. | | *tenella.* |

1. *coleoptrata*, Fall.

♂ brownish-black. Elytra paler, their cuneus and lateral margins dark. Thorax with a deeply impressed transverse line in front. Sides nearly straight, not dilated in front; base deeply sinuate; sides of the corium curved. Cuneus reddish-brown, very narrowly pale at the base outwardly; membrane dusky, slightly paler below the apex of the cuneus. Antennæ: 2nd and 3rd joints subequal.

♀ very convex, brown; head, thorax, scutellum and legs more or less red. Elytra covering the subglobose body.

Length, ♂, $\frac{2}{3}$ line; ♀, $\frac{2}{3}$ line.

Under leaves; on palings, &c.

2. *tenella*, Zett.

♂ very like the preceding, but differing in the shape of the thorax, which has the lateral margins dilated and more or less reflexed near the anterior angles, thus giving them a sinuate form; the 3rd joint of the antennæ is also much shorter in comparison to the 2nd. It is also a rather larger species.

♀ brown, head and legs red; side margins of thorax reflexed; elytra quite rudimentary; body wider and less convex than in *coleoptrata*.

Length, ♂, 1 line; ♀, $\frac{4}{5}$ line.

Under leaves, &c.

3. *inconspicua*, Dougl. & Scott. (Genus *Pseudophleps*.)
Smaller than either of the preceding. ♂ black, shining. Thorax with the sides not margined, and with a strongly marked transverse impression across the middle; membrane slightly dusky and iridescent; 2nd joint of the antennæ considerably longer than the 3rd and subequal to the 4th.
♀ with the elytra abbreviated as in *tenella*, but at once distinguished by the round, shining thorax, without reflexed margins or transverse depression.
Length $\frac{2}{3}$ line.
♂, Weymouth; ♂ and ♀, Lowestoft, on the sandhills, at the roots of grass, &c.
This may, I fancy, prove to be eventually the *Signoreti*, Fieb.

## ANTHOCORIDÆ.

A. Thorax constricted in front into a short waist.
B. Waist exceedingly short, sides strongly reflexed near the front angles .. .. .. .. .. *Tetraphleps.*
BB. Waist not very short, sides scarcely reflexed in front.
C. Membrane with four veins .. .. .. .. *Acompocoris.*
CC. Membrane with three veins.
a. Rostrum long, reaching beyond the anterior coxæ .. .. .. .. .. .. *Temnostethus.*
b. Rostrum short, not reaching beyond the anterior coxæ .. .. .. .. .. *Anthocoris.*
AA. Thorax not constricted into a waist in front.
B. Wings without a hook-like nerve to the cell.
C. Species robust, pubescent.
a. Head short, scarcely longer than its width between the eyes .. .. .. .. .. *Brachysteles.*
b. Head much longer than its width between the eyes .. .. .. .. .. .. *Cardiastethus.*
CC. Species elongate, glabrous .. .. .. .. *Xylocoris.*
BB. Wings with a hook-like nerve to the cell.
C. Thorax truncate in front.
a. Front femora thickened .. .. .. .. *Piezostethus.*
b. Front femora not thickened .. .. .. *Triphleps.*
CC. Thorax emarginate in front .. .. .. .. *Lyctocoris.*

### Tetraphleps.

1. *vittata*, Fieb. Fig. Dougl. & Scott, Brit. Hem. pl. xvi. fig. 4.
Head and thorax black, the latter with the sides rounded in front and reflexed; surface transversely rugose and punctured, with a somewhat raised smoother portion in front of the middle; base largely and deeply sinuate;

scutellum black. Elytra castaneous, punctured, covered with fine, short, golden hairs; clavus inwardly paler. Membrane smoky-brown, the nerves and a spot below the cuneus pale. Legs reddish-brown; femora, except at the apices, black. Antennæ black, 2nd joint brown in the middle.

Length $1\frac{1}{4}$ line.

On larches, firs, &c.

ACOMPOCORIS = *Temnostethus*, pars, D. & S.

1. Wider. Elytra paler; membrane obscurely white; apical joint of the antennæ decidedly shorter than third .. .. *pygmæus.*
2. Narrower. Elytra darker; membrane dark, with the nerves pale; third and fourth joints of antennæ subequal .. *alpinus.*

1. *pygmæus*, Fall. Fig. Dougl. & Scott, Brit. Hem. pl. xvi. fig. 5 (*lucorum*).
= *lucorum*, D. & S.

Head, thorax and scutellum black, covered with golden, somewhat scattered pubescence. Thorax transversely wrinkled and punctured, with a smoother raised portion in front. Elytra pale brownish-yellow, covered with short golden hairs; membrane milky; legs pale testaceous, femora darker at the base. Antennæ testaceous, base and apex from the 2nd joint darker.

Length $1\frac{1}{4}$ line.

On fir trees, &c.; common.

2. *alpinus*, Reut.

Narrower and darker than the preceding, with rather shorter pubescence; sides of the thorax less rounded at the anterior angles. Elytra much darker; the membrane longer and dusky, with its nerves pale; legs dark brownish-black; tibiæ slightly paler in the middle. Antennæ black, second joint brownish in the centre.

Length $1\frac{1}{2}$ line.

Norwich and Scotland; on firs.

TEMNOSTETHUS.

I. Elytra dark brown, with a white spot on the margin below the base .. .. .. .. .. .. .. *pusillus.*
II. Elytra pale brown, not spotted .. .. .. .. *nigricornis.*

1. *pusillus*, H.-Schff. Fig. Wanz. Ins. fig. 977.

Black or brownish-black, a subhumeral spot and a small roundish spot at the base of the cuneus whitish. Membrane dusky, a spot at the base, and a transverse one below the apex of the cuneus, white. Thorax with

the sides nearly straight, slightly reflexed in front. Legs and antennæ black or brown; middle of the second joint of the latter and the tibiæ and tarsi pale.

Length 1—1½ line.

By beating oaks, &c.

Often with the elytra undeveloped.

2. *nigricornis*, Zett.

Black, shining. Antennæ entirely black, second joint a little longer than third and fourth together; rostrum, reaching to the middle of the mesosternum, dark piceous; pronotum with the side margins distinctly sinuate, the transverse channel of the disc deep, the base largely emarginate; hemelytra developed, brown. Cuneus blackish-brown, membrane blackish; the basal half whitish. Thighs piceous; tibiæ and tarsi dark ferruginous.

Length 3½ lines.

Perth; one specimen on *Pinus sylvestris*.

### Anthocoris.

1. Third joint of antennæ pale at the base; elytra shining .. *nemorum*.
2. Third joint of antennæ entirely dark; elytra not shining .. *nemoralis*.

1. *nemorum*, Linn. Fig. Dougl. & Scott, Brit. Hem. pl. xvi. fig. 6.

Shining. Head and thorax black, the posterior angles of the latter more or less brownish; its disk with a deep transverse channel behind the middle; basal portion of the surface transversely wrinkled and punctured. Scutellum black. Elytra pale yellowish-white, somewhat transparent; the apex of the clavus, a roundish spot on the disk of the corium behind the middle, and the membranal margin, brown; the brown colour often spreads all over the cuneus and the apex of the corium. Membrane white, with an apical spot, and generally a transverse band above the middle connected with it, brown. Legs testaceous, third pair sometimes with a black ring near the apex of the femora. Antennæ testaceous, first and fourth joints and the apex of the second and third black.

Length 1½—2 lines.

Common, by beating trees, &c. in summer.

2. *nemoralis*, Fab. = var. *Saxothamni*, D. & S.

Duller and flatter than the preceding. Head and thorax

black, punctured, the latter impressed in the middle transversely. Scutellum black. Elytra dull, the embolium and cuneus more shining and very coarsely punctured; brown with a paler subhumeral spot on the margin. Membrane dusky, with a basal spot, a spot below the cuneus on each side, and the nerves, pale. Legs reddish-testaceous. Antennæ black, base and extreme apex of second joint pale.

Length $1\frac{1}{2}$—2 lines.

Common, by beating, &c.

*A. sarothamni*, D. & S., is a dark, nearly black, variety of this species, with entirely black antennæ, and is found on the broom. I have, however, repeatedly found it with the paler forms and intervening varieties.

### Brachysteles.

1. *pilicornis*, Muls. Fig. Dougl. & Scott, Brit. Hem. pl. xxi. fig. 4.

Short, ovate. Head and thorax black, thickly covered with golden hairs, the latter with a deep transverse impression behind the middle. Scutellum black. Elytra ochreous-brown, densely pubescent, with a paler lateral spot at the base, sometimes extending to the apex of the cuneus. Legs testaceous. Antennæ hairy, brown, base of the second joint paler.

Length 1 line.

"One specimen, Dr. Power," D. & S.

Having never seen a British example of this species, I have drawn up my description from a continental one. It is very like a *Triphleps* in general appearance, but its densely pubescent surface, smaller membrane and generic characters at once separate it.

### Cardiastethus.

1. *testaceus*, Muls. Fig. Dougl. & Scott, Brit. Hem. pl. xvii. fig. 5.

Bright testaceous, elytra somewhat more obscure; clothed with rather short golden hairs. Thorax with a raised smooth portion in front, surrounded at the base and sides by a punctured impression; base deeply sinuate. Scutellum shining. Elytra dull; membrane smoky brown, with a paler spot below the apex of each cuneus.

Legs and antennæ testaceous, the apex of the latter obscure.

Length 1 line.

Horsell and Chobham, by sweeping.

The bright yellow colour of this will separate it at once from its allies.

### Xylocoris.

1. *ater*, Duf. Fig. Doug. & Scott, Brit. Hem. pl. xvii. fig. 6.

Elongate, black, shining; membrane dusky, clear white at the base; tibiæ pale. Antennæ obscurely brown; second joint paler, except at its apex.

Length 1 line.

Under bark, widely distributed.

### Piezostethus.

I. Elytra pale yellowish-white.
   a. Larger, $1\frac{1}{4}$ line. Apical joints of antennæ very thin and filiform .. .. .. .. .. *galactinus.*
   b. Smaller, $\frac{2}{3}$ line. Apical joints of antennæ not very thin .. .. .. .. .. .. *formicetorum.*

II. Elytra pale yellowish-brown; cuneus and embolium darker .. .. .. .. .. .. .. *cursitans.*

1. *galactinus*, Fieb. Fig. Dougl. & Scott, Brit. Hem. pl. xvii. fig. 2.

Head, thorax and scutellum pitchy black, shining; thorax slightly impressed on its basal half; scutellum deeply impressed at the apex; elytra ochreous-white, slightly clouded with brown at the apex; membrane pure milk-white; legs and antennæ pitchy brown; tibiæ paler.

Length $1\frac{1}{4}$ line.

Common in stable refuse, manure heaps, &c.

2. *cursitans*, Fall. = *rufipennis*, D. & S. Fig. Hahn, Wanz. Ins. pl. lxxix. fig. 244 (*corticalis*).

Rather smaller than the preceding and with a distinctly shorter thorax. Head, thorax and scutellum pitchy brown, shining; elytra dull yellowish, the clavus reddish-brown, the embolium and cuneus pitchy; membrane clear milk-white; antennæ and legs pitchy brown, the tibiæ paler.

Length $1\frac{1}{5}$ line.

Under bark; rare.

The undeveloped form has the elytra abbreviated and of a lurid brown colour.

3. *formicetorum*, Boh.

Scarcely half the size of the preceding; head, thorax and scutellum pitchy brown: elytra dull ochreous, densely pubescent, slightly darker towards the apex outwardly; membrane clear milky white; legs and antennæ pitchy brown, the tibiæ paler.

Length $\frac{2}{3}$ line.

Scotland; in nests of *Formica rufa*.

### Triphleps.

1. All the tibiæ pale. Antennæ entirely pale, in ♂ not incrassated .. .. .. .. .. .. *minutus*.
2. Posterior tibiæ more or less piceous, ♀ often black. Antennæ not entirely pale, in ♂ incrassated .. *niger*.

1. *minutus*, Linn. Fig. Dougl. & Scott, Brit. Hem. pl. xvii. fig. 3.

Head and thorax black, shining; the latter with a strongly marked central transverse impression, deeply punctured and wrinkled posteriorly; scutellum black; elytra pale ochreous, punctured and finely hairy, sometimes with a dark cloud across the apex; membrane dusky, paler at the base; antennæ and legs testaceous, posterior thighs sometimes darker.

Length 1 line.

Common by sweeping, &c.

2. *niger*, Wolff. Fig. Wolff, Ic. Cim. fig. 161.

Var. *obscurus*, D. & S.

Smaller and more parallel-sided than *minutus*, with a thicker, rather denser pubescence on the elytra. ♂ with the elytra more or less pale or piceous, the apex widely black; ♀ sometimes coloured as the ♂, sometimes entirely black; legs: 1st pair pale, 3rd and 4th more or less pitchy, sometimes black. Antennæ in ♂ much thickened, sometimes with second and apical joints pale; ♀ with thinner antennæ.

Length $\frac{3}{4}$ line.

Common by sweeping, especially on heaths.

*T. obscurus*, D. & S., is, I believe, only a large pale variety of this very variable species. Mr. Douglas has kindly lent me specimens for examination; but I can see no definite structural character in them to justify a distinct species being retained.

### Lyctocoris.

1. *campestris*, Fab. = *domesticus*, D. & S. Fig. Dougl. & Scott, Brit. Hem. pl. xvii. fig. 1.

Testaceous-brown, densely covered with golden hairs; mouth, lateral margins of thorax, basal half of the elytra, a small spot just above the cuneus, legs and base of 2nd joint of the antennæ, paler; membrane milky white, with a dusky cloud across the apex; 3rd and 4th joints of the antennæ filiform. Thorax impressed at the base on each side; elytra very closely and strongly punctured.

Length 1½ line.

Common in rubbish, thatch, &c.

## ACANTHIDÆ.

### Acanthia.

1. Covered with short hairs. Sides of the thorax widely depressed, especially near the front angles, and reflexed.
   - a. Larger. 3rd and 4th joints of antennæ together considerably more than twice as long as 2nd (inhabiting houses) .. .. .. .. *lectularia.*
   - b. Smaller. 3rd and 4th joints of antennæ together subequal to twice the length of the 2nd (inhabiting pigeon cots) .. .. .. .. .. *columbaria.*
2. Covered with long hairs. Sides of thorax narrowly depressed, scarcely widened in front and hardly reflexed.
   - a. Larger. Covered with long silky hairs; 3rd joint of antennæ decidedly longer than 4th .. .. *pipistrelli.*
   - b. Smaller. Covered with long, somewhat bristly hairs; 3rd and 4th joints of antennæ subequal .. *hirundinis.*

1. *lectularia*, Linn. Fig. Dougl. & Scott, Brit. Hem. pl. xvii. fig. 7.

Ferruginous, deeply punctured and covered with short pale hairs. Thorax widely depressed and reflexed at the sides, the reflexed margins much widened in front; body large and round. Antennæ: 1st joint short and stout, 2nd slightly longer than the fourth, 3rd much longer than the 2nd.

Length 2½—3 lines.

In houses.

2. *columbaria*, Jenyns. Fig. Ann. Nat. Hist. iii. pl. v. fig. 1.

Very like the preceding, but smaller and rather rounder in the body; the sides of the thorax rather more reflexed;

the antennæ rather shorter, the third joint not being so long in proportion to the fourth.

Length 2 lines.

In pigeon cots; Norwich, &c.

3. *pipistrelli*, Jenyns, Fig. Ann. Nat. Hist. iii. pl. v. fig. 3.

Like the others of the genus in colour, but more elongate in shape, and at once distinguishable by the long silky pubescence; besides these characters, the margins of the thorax are much less widely depressed, scarcely reflexed or widened in front.

Length 2 lines.

Very rare. In bats' nests.

4. *hirundinis*, Jenyns, Fig. Ann. Nat. Hist. iii. pl. v. fig. 2.

Smaller than any of the others, with long hairs like *A. pipistrelli*, but not so silky and evenly disposed; thorax smaller and squarer than any of the above, and with the sides very narrowly margined; the antennæ are also thicker and shorter.

Length 1¾ line.

Rare. In martins' nests.

## CERATOCOMBIDÆ.

Thorax convex, not nearly twice as wide as long .. .. *Ceratocombus.*
Thorax depressed, twice as wide as long at the base .. *Cryptostemma.*

### Ceratocombus.

1. *coleoptratus*, Zett. = *muscorum*, D. & S. Fig. Dougl. & Scott, Brit. Hem. pl. xxi. fig. 5.

Brown, legs and antennæ paler. Head with numerous long fine hairs scattered over its surface. Thorax convex, rather wider behind; the sides very slightly rounded. Elytra widest behind, covering the body. Antennæ: 1st and 2nd joints thickened, the rest very fine and filiform.

Length 1 line.

Moss; Norfolk, Esher, &c.

### Cryptostemma.

1. *alienum*, H.-Schff. Fig. Dougl. & Scott, Brit. Hem. pl. xvii. fig. 8.

Pale greyish-brown, covered with very fine adpressed hairs, giving it a soft, somewhat downy appearance.

Thorax flat, much widened posteriorly. Elytra with the nerves very strongly marked; sides subparallel; base of the cuneus very narrowly paler; apex widely rounded.

Length 1½ line.

On the banks of streams, &c.; Scarborough, North Wales, Kerry (Ireland), South Devon, Edinburgh, &c.

## REDUVIDÆ.

A. Legs exceedingly long and slender .. .. .. *Ploiaria.*
AA. Legs not very long and slender.
B. Head much produced in front; antennæ inserted at a considerable distance in front of the eyes .. *Pygolampis.*
BB. Head not much produced in front; antennæ inserted just in front of the eyes.
a. Antennæ very thin; filiform at the apex .. *Reduvius.*
b. Antennæ not thin; not filiform at the apex .. *Coranus.*

### PLOIARIA.

I. Larger, legs and antennæ with long hairs .. .. *vagabunda.*
II. Smaller, legs and antennæ not hairy .. .. .. *culiciformis.*

1. *vagabunda*, Linn. Fig. Dougl. & Scott, Brit. Hem. pl. xviii. fig. 1.

Elongate, pale ochreous; head and thorax with darker markings near the margins; the margins of the thorax narrowly white; posterior angles produced slightly backwards and somewhat lobate; scutellum with a spine at the base. Elytra mottled with brown, with two dark-brown spots near the extremity at the sides of the membrane; membrane brown, finely reticulated with white. Legs and antennæ extremely long and thin, whitish, finely hairy and banded with narrow brown bands.

Length 3½ lines.

In ivy, &c., by beating; local.

2. *culiciformis*, De G. Fig. De Geer, Mem. iii. pl. xvii. fig. 1—8.

= *erratica*, Dougl. & Scott.

Very like the above, but much smaller, with slightly shorter antennæ, and more distinctly marked elytra, and a shorter, almost obsolete spine on the scutellum. The legs and antennæ also have no long hairs, as in *P. vagabunda*.

Length 2½ lines.

In thatch, &c.; not rare.

PYGOLAMPIS.

1. *bidentata*, Fourc. Fig. Dougl. & Scott, Brit. Hem. pl. xviii. fig. 4.
= *bifurcata*, Dougl. & Scott.

Dark, dull brown, elongate; head nearly as long as the thorax, spined beneath and at the back. Antennæ inserted quite near its apex; 1st joint of the antennæ thick; the rest much thinner and generally turned backwards; rostrum very thick. Thorax with two large spines beneath; above flat and subtrapezoidal. Elytra shorter than the body; connexivum with a pale spot at the junction of each segment. Legs rather paler than the rest of the insect; front tibiæ ringed with brown.

Length 7 lines.

Very rare, near Bridgenorth, Salop.

CORANUS.

1. *subapterus*, De Geer. Fig. Dougl. & Scott, Brit. Hem. pl. xviii. fig. 2.

Black, covered with a dense adpressed grey pubescence, and with long, scattered hairs on the head, thorax, legs and antennæ; eyes prominent, large; head much narrowed behind. Thorax constricted in the middle; scutellum tuberculate, almost spinose. Elytra almost always rudimentary, very narrow, with a short, black, shining membrane; body subovate, with a somewhat naked line down the middle, and a naked spot on each side of each segment; connexivum pale, spotted with black. Legs with the tibiæ more or less pitchy.

Length 4—5 lines.

Deal, Weybridge, Addington, &c.; under *Erodium*, not rare.

REDUVIUS.

1. *personatus*, Linn. Fig. Dougl. & Scott, Brit. Hem. pl. xviii. fig. 3.

Brown, hairy, base of the tibiæ narrowly paler; head small, neck much constricted. Thorax with a wide central furrow, much widened posteriorly; surface smooth in front; rugose behind, base rounded. Scutellum with a raised V-like smooth carina, the rest rugose. Elytra pitchy brown. Antennæ: 1st joint brown, apex paler; rest more or less pale.

Length $7\frac{1}{2}$—8 lines.

In houses, fowl-houses, &c.; often flies by night.

## NABIDÆ.

I. Dull, colouring obscure .. .. .. .. *Nabis.*
II. Brilliant shining .. .. .. .. .. *Prostemma.*

### Nabis.

I. Bright chocolate brown; legs with the thighs marbled.
  a. Antennæ longer than the body .. .. *brevipennis.*
  b. Antennæ not so long as the body .. *lativentris.*
II. Not bright chocolate brown, thighs finely-spotted, not marbled.
  A. Apex of posterior thighs black .. .. *major.*
  AA. Apex of posterior thighs not black.
    B. Dark greyish-brown, tolerably robust; body above black, with the margins pale .. *flavomarginatus.*
    BB. Pale ochreous, or ochreous-brown, elongate; body not black above, but sometimes very wide in the ♀.
      C. First joint of the antennæ longer than the head. Elytra almost always rudimentary.
        a. Sides of the body foliaceous; body in the ♀ dilated .. .. .. .. *limbatus.*
        b. Sides of the body not foliaceous; body in the ♀ not dilated .. .. .. .. *Poweri.*
      CC. First joint of the antennæ shorter than the head. Elytra developed.
        D. Thorax at the base wider than long; anterior margin not half the width of the base *ferus.*
        DD. Thorax at the base narrower than long; anterior margin half the width of the base.
          a. Wider, paler (pale ochreous); antennæ longer (found in grassy places, &c.) .. *rugosus.*
          b. Narrower, darker (reddish-brown); antennæ shorter (found on heath) .. .. *ericetorum.*

1. *brevipennis*, Hahn. Fig. Hahn, Wanz. Ins. iii. pl. lxxxiii. fig. 253.

Chocolate brown, finely pubescent; head, thorax in front and body more obscure. Elytra very short, covering about half the body or not quite half. Connexivum with a red spot on the margin, at the base of each segment. Legs pale ochreous, femora marbled and banded with greyish-brown; two front pairs of tibiæ with a band just below the base, a wider one above the middle, and the apex dark; posterior ones at the base and apex dark, and with a pale narrow band below the dark basal one. Antennæ long, finely pubescent; base of the first joint and a band near the apex of the second black.

Length 4—4½ lines.

On hazel, &c.; Wimbledon, Woking, Reigate.

The connexivum of the ♀ is much wider than that of the ♂ and the entire insect larger. Scarcely ever found with developed elytra.

2. *lativentris*, Boh. Fig. Hahn, Wanz. Ins. i. tab. 6, fig. 24 (*subapterus*)
= *apterus*, D. & S.

Somewhat like the preceding but smaller, chocolate brown, finely pubescent, side of the thorax in front dark brownish-black; scutellum black, with the sides paler. Elytra more or less mottled, longer than in the former species, covering nearly three quarters of the body; connexivum with a red band at the base of each segment. Thighs mottled, with two irregular dark bands towards the apex; tibiæ much as in the preceding. Antennæ much shorter.

Length 3½—4 lines.

Very common by sweeping, &c.

3. *major*, Costa. Fig. Dougl. & Scott, Brit. Hem. pl. xviii. fig. 5.
= *flavomarginatus*, D. & S. (Brit. Hem.).

Greyish-brown, finely pubescent; head with a central stripe. Thorax more or less mottled with brown, with a stripe down the middle and one on each side black. Scutellum black, with the base on each side pale; clavus with the nerves dark; corium darker brown, with the nerves paler, lateral margins at the base pale ochreous; connexivum pale, dark at the extreme apex; legs ochreous, front femora with a wide black longitudinal stripe, intermediate pair spotted with brown and more or less dark at the apex; hind pair widely black at the apex: beneath ochreous, with brown markings.

Length 4—4½ lines.

Common under refuse, &c.

4. *flavomarginatus*, Scholz.

Brown, very like the preceding but scarcely pubescent except on the exposed part of the abdomen, with much longer 1st joint to the antennæ, with entirely pale legs and almost always with undeveloped elytra. Head, thorax and scutellum with a black central line, and the thorax with a short lateral one in front. Elytra ochreous-brown, with the nerves slightly paler, generally undeveloped, with

their apices extending to about the middle of the body. Abdomen above black, pubescent, with a central vitta, and the connexivum pale; down the middle of the central vitta is a narrow dark line. Legs testaceous, thighs spotted with brown; 1st joint of the antennæ considerably more than half the length of the second.

Length 4—4½ lines.

Chobham, Reigate, Aberdeen, Rannoch, Manchester, &c.

5. *limbatus*, Dahlb.

Pale ochreous; head, thorax and scutellum with a dark central line; the thorax also with several brown markings about the middle. Elytra short and rudimentary, considerably rounded at the apices outwardly; body with three dark lines down the middle, the central one the narrowest and darkest; connexivum pale and foliaceous, sometimes with a reddish line on its inner margin; legs ochreous; thighs spotted with brown, apex of tarsi black; antennæ ochreous.

♀ differs from the ♂ in having the body suboval.

Length 4—4½ lines.

Not rare by sweeping, &c.

6. *Poweri*, E. Saund.

Rather larger than the preceding and paler. Head, thorax, scutellum and body with a dark central line obscurely marked on the head and nearly black on the body. Thorax much longer than in *limbatus* and proportionately rather narrower in front; rudimentary elytra longer and truncate, and only slightly rounded at the exterior angles; body pubescent, rather more elongate; connexivum narrow and not foliaceous, pale or reddish. On each side of the black dorsal line of the body is a narrow pale line, outside which is another dark one, narrow in the ♂, wide in the ♀. Legs and antennæ ochreous; thighs spotted with brown, considerably longer than in *limbatus*. ♂ and ♀ alike in having the body elongate and narrow.

Length 4¾—5½ lines.

In a marshy place near Chobham, Surrey, by sweeping.

7. *ferus*, Linn. Fig. Hahn, Wanz. Ins. iii. tab. 83, fig. 252.

Pale greyish-ochreous; head with a dark longitudinal spot between the eyes, ocelli red; thorax much narrowed

in front and somewhat swollen at the base, with a dark median line in front, united to the base by a very narrow, obscure one; base wide, more than twice as long as the anterior margin; scutellum dark, with a pale spot on each side; elytra of an uniform pale greyish-ochreous colour; the nerves, if anything, a little paler, with a small spot at the apex of the clavus, and two on the membranal margin of the corium, black; membrane slightly dusky, the nerves darker; legs and antennæ of the same colour as the rest of the insect; thighs spotted.

Length 3½ lines.

Common by sweeping, &c.

8. *rugosus*, Linn. Fig. Léon Dufour, Recherches, 62, pl. v. fig. 55.

= *dorsalis*, D. & S.

Pale ochreous; head, thorax and scutellum with a dark central band; base of the thorax not more than twice as long as the anterior margin, disk with numerous brownish-red irregular markings; elytra with the nerves paler than the ground colour; a very small spot behind the middle, and another on the membranal margin of the corium, black; membrane dusky, with darker nerves, seldom fully developed; legs and antennæ ochreous; femora spotted.

Length 3¼ lines.

Common under herbage, in rubbish, &c.

Differs from *ferus* in the shape of the thorax and its less pale unicolorous appearance.

9. *ericetorum*, Scholz.

Extremely like the preceding, but narrower and darker; being of a reddish-brown, and with rather shorter antennæ and shorter anterior femora.

Length 3¼ lines.

Common on heaths under *Erica*.

### Prostemma.

1. *guttula*, Fab. Fig. Dougl. & Scott, Brit. Hem. pl. xviii. fig. 6.

Greenish-black, shining, with long, scattered hairs. Elytra and legs scarlet (elytra abbreviated).

Length 4¼ lines.

Very rare; Charlton, Sandwich, Manchester.

# SALDIDÆ.

## SALDA.

I. Ocelli placed closed together, but not contiguous.

A. Sides of the thorax pale.

a. Insect larger, densely pubescent .. .. *pilosa.*
b. Insect smaller, not densely pubescent .. *lateralis.*

AA. Sides of the thorax not pale.

B. Species large.

C. Covered with long hairs .. .. .. *scotica.*

CC. Not covered with long hairs.

D. Species brown-black, gold-pubescent .. *littoralis.*

DD. Species black, glabrous .. .. .. *morio.*

BB. Species smaller.

C. Thorax and scutellum covered with black, bristly hairs .. .. .. .. *pilosella.*

CC. Thorax and scutellum not covered with black, bristly hairs.

D. Sides of thorax straight, and with sides of elytra black, not spotted until just above the apex.

a. Apical joint of antennæ longer than 3rd *orthochila.*
b. Apical joint of antennæ shorter than 3rd *conspicua.*

DD. Sides of thorax curved, or if straight, as in *C. album*, then with the sides of the elytra spotted near the middle.

E. Elytra with its sides entirely pale, except at the extreme base.

a. Short and round, pubescence silvery, pale margin widening towards the apex .. *marginalis.*
b. Oblong-oval, without silvery hairs, pale margin linear throughout .. .. *opacula.*

EE. Elytra with its sides not entirely pale.

F. Sides of thorax straight, two front pairs of tibiæ banded .. .. .. .. *C-album.*

FF. Sides of thorax not straight, tibiæ not banded.

G. Deep black, all the markings dull white; tibiæ black or obscure, narrowly pale above the apex .. .. .. .. .. .. *arenicola.*

GG. Black or brownish-black, all the markings not white.

H. Markings more or less obscure, with much tendency to spread and amalgamate, sometimes to such an extent as to make the elytra entirely pale, except at the extreme base .. .. .. .. .. *pallipes.*

HH. Markings more distinct, although sometimes obscure; in pale forms the markings become paler, but do not tend to unite .. *saltatoria* et vars.

Var. 1? Larger markings more obscure .. .. var. *fucicola.*
Var. 2? Much more densely pubescent, so as to give quite a golden aspect to the specimens .. var. *vestita.*

II. Ocelli contiguous.
  A. Second joint of antennæ pale, except at the extreme base .. .. .. .. *Cocksii.*
  AA. Second joint of antennæ black.
    a. Covered with black, bristly hairs.. .. *elegantula.*
    b. Not covered with bristly hairs .. .. *cincta.*

1. *pilosa*, Fall. (Pl. XII. fig. 11.)

Entire insect densely pilose, with upright black hairs. Head and thorax black; the sides of the latter widely pale. Elytra: clavus black, with the apex ochreous; corium very variable in colour, sometimes almost entirely black in the ♂, with an irregular pale patch on the lateral margin, near the middle, and a smaller one near the apex; at other times ochreous, with only the extreme base and apex and a small round spot behind the middle black. Legs ochreous, thighs spotted, extreme apices of tibiæ and tarsi black. Antennæ testaceous, last two joints more obscure.

Length 2—2½ lines.

Bristol; Broughton, Lancashire; Sandwich; Pegwell Bay.

2. *lateralis*, Fall. Fig. Dougl. & Scott, Brit. Hem. pl. xvii. fig. 9.
=*pulchella*, D. & S.

Somewhat shining, deeply punctured, and covered with exceedingly short hairs. Head and thorax black; mouth and the sides of the thorax pale whitish. Scutellum black, with its apex, in pale specimens, sometimes pale. Elytra very variable in colour, seldom with the membrane fully developed; in developed specimens the elytra are black, with the apex of the cuneus, a large triangular patch on the lateral margin at the base, and a smaller one at the apex, pale whitish; the apex itself black; membrane milky white, extending considerably beyond the apex of the body, veins brown; in undeveloped specimens the elytra vary from being black, with the lateral margins at the base and apex pale, to being entirely pale; between these extreme forms constant varieties occur. Legs pale; two lines on each thigh, and the extreme apices of the tibiæ and tarsi, black. Antennæ pale, rather more dusky towards the apex.

Length 1½—2 lines.

Very common at most of our south coast places, also at Deal, &c.

The developed form is very rare. I took several last year at Worthing, and they are all alike in the style of markings.

3. *scotica*, Curt. (Pl. XII. fig. 8.)
= *riparia*, Dougl. & Scott.

Black, covered with black semi-erect hairs, and short, pale, adpressed pubescence. Thorax with the sides straight. Elytra with the sides gently rounded; disk of each with several pale, roundish spots, varying much in number, and often entirely obliterated; membrane dark, the nerves black. Legs black, a line along the top of each thigh, a band above the apex of each tibia, and the 2nd joint of the tarsi, pale. Antennæ black.

Length $2\frac{3}{4}$ lines.

Scotland; Bettws-y-Coed, Wales, and north of England; not rare.

4. *littoralis*, Linn. (Pl. XII. fig. 1.)

Black, densely covered with adpressed, golden hairs, so as to give it a brownish appearance. Sides of the thorax slightly rounded; disk with a deep, transverse impression. Elytra rather widely reflexed at the sides; disk occasionally with a few obscure, round, pale spots; membrane very short, pale, with the veins thick and black. Legs pale; thighs obscurely spotted; front pair black beneath; tibiæ and tarsi with their apices obscure.

Length $2\frac{3}{4}$ lines.

Common on marshy ground, especially by the sea-side.

5. *morio*, Zett. (Pl. XII. fig. 4.)

Black, glabrous, similar in shape to the preceding. Apices of thighs, the tibiæ and the first two joints of the tarsi testaceous.

Length $2\frac{3}{4}$ lines.

Rare; Scarborough.

6. *pilosella*, Thoms. (Pl. XII. fig. 12.)

Head, thorax and scutellum black, densely covered with black, semi-erect, pilose hairs and with a short, golden, adpressed pubescence; sides of the thorax nearly straight. Elytra covered with short black hairs and golden pubescence; clavus black, with the apex pale; corium pale, with the base and a few markings at the side black; the disk with a few indistinct white markings; membrane pale, the nerves and an oblong spot between each two brown.

Legs pale, a black line beneath each thigh, a line of dark spots above; tibiæ more or less obscure at the base; antennæ black, 1st joint and apex of 2nd pale.

Length 2 lines.

Not rare by the sea coast, on marshy ground.

The upright pubescence of the head, thorax and scutellum is the distinguishing feature of this species.

7. *orthochila*, Fieb. (Pl. XII. Fig. 3.)

Black, with fine scattered golden hairs intermixed with the short, scarcely visible, black ones; thorax somewhat brassy, its sides straight; scutellum slightly swollen and subrugose; elytra widely but slightly reflexed at the sides; clavus with a pale spot near its apex; corium with numerous, round, yellowish spots about the disk, and a larger one on the lateral margin just above the apex; membrane dull yellowish, black at the base and with a black spot below the apex of the cuneus; nerves black. Legs pale, thighs sometimes dark beneath; tibiæ at their extreme base and apex black; tarsi black at the apex; antennæ black, basal joint testaceous.

Length 1¾—2 lines.

Not common; Scotland, Penzance, Addington Hills, Snowdon, Llangollen, Lincolnshire.

The perfectly straight sides of the thorax, the very projecting eyes and the disposition of the spots on the elytra divide this and the following from the others of the genus.

8. *conspicua*, Dougl. & Scott. Fig. Ent. Mo. Mag. vol. iv. pl. i.

Black; thorax considerably longer than in the preceding, with a few golden hairs, its sides straight and deeply impressed; scutellum subrugose; elytra black, in parts with a velvety appearance, its sides impressed near the base; clavus with a small spot near the apex; corium with numerous pale round or oblong spots on the disk and a larger subtriangular one on the lateral margin just above the apex; membrane pale yellowish-brown, its base and the nerves black, and with an oblong black spot between each pair of nerves. Legs: thighs testaceous-brown, pale at the apex; tibiæ pale, the base and apex narrowly darker; tarsi with the apex dark; antennæ black, basal joint pale below; apical joint not quite so long as the 3rd.

Length 2 lines.

Rare; Invercannoch, Rannoch.

Closely allied to *riparia*, Fall.; but differs in the colour and shape of the markings, and in the shorter 2nd joint of the antennæ.

9. *marginalis*, Fall. (Pl. XII. fig. 6.)

Small and roundly oval; dull black, with scattered, short, silvery-white hairs. Head, thorax and scutellum very finely rugose, the thorax scarcely impressed at the sides. Elytra black; its sides, except at the extreme base and apex, pale; the colour spreading at the apex, and generally also above the middle; membrane obscure. Thighs pitchy brown, the apices paler; tibiæ and tarsi testaceous, their extreme apices black. Antennæ: 1st and 2nd joints testaceous; the other two obscure brownish-black.

Length $1\frac{1}{8}$ line to $1\frac{1}{2}$ line.

Rare; Chobham Common, August, 1875, and Dorchester, in damp spots on the heath.

A most distinct species.

10. *opacula*, Zett. (Pl. XII. fig. 13.)

Elongate oval, black, sides of the thorax widely impressed. Scutellum and clavus with golden hairs, the latter with an obscurely pale spot near the apex. Corium with a few obscure pale markings; lateral margin, except at the base and extreme apex, narrowly testaceous; membrane obscure, its outer margin testaceous; nerves black; legs testaceous; apex of tibiæ and tarsi black; antennæ obscure.

Length $1\frac{1}{2}$ line.

Rare; Scotland, Braemar.

11. *C-album*, Fieb. (Pl. XII. fig. 2.)

Shorter and more regularly oval than most of the species of this genus; rather densely covered with golden hairs. Head and thorax bronzy-black, with the sides straight or nearly so; discal impression very shallow but well defined. Elytra with the sides much rounded; clavus with a small yellow spot at the apex; corium with a large yellow spot on the middle of the lateral margin and a smaller one near the apex, and with several irregular yellow and whitish marks on the disk; near the apical angle is a small, round, white speck. Membrane yellowish, the nerves and a spot between each pair black. Legs testaceous; thighs irregularly spotted; tibiæ black at the

extreme base and apex; 1st and 2nd pairs each with an obscure median ring; tarsi black at the apex. Antennæ: 1st and 2nd joints testaceous, 3rd and 4th black.

Length 2 lines.

Not common; Isle of Wight, Newcastle, Cumberland, Isle of Man, &c.

The short oval shape, straight-sided thorax and banded tibiæ, distinguish this species from all the others.

12. *arenicola*, Scholz. (Pl. XII. fig. 5.)

Deep black; thorax with the sides slightly rounded. Elytra with scattered golden depressed hairs, especially on the clavus; clavus with a small pale spot near the apex; corium with a large transverse spot near the middle of its lateral margin, a smaller one near the apex and numerous others on the posterior portion of the disk pale whitish. Membrane dark at the base, the cell nerves black; cells pale, with an oblong dark spot in each; below the apex of the cuneus is a small pale spot, and immediately below it a longitudinal black one. Thighs pale, with a black line beneath and a row of black spots above; front tibiæ pale, sometimes with a black longitudinal line; 2nd and 3rd pairs black, with a narrow apical ring pale, sometimes also pale at the base; tarsi black at the apex.

Length 2 lines.

Rare; Portsmouth, Bournemouth, Isle of Wight, &c.

The almost white markings, the large transverse marginal spot on the corium, and the dark tibiæ, separate this readily from *S. saltatoria*, &c.

13. *pallipes*, Fab.

= *palustris*, Dougl.

Black, more or less covered with adpressed golden hairs. Thorax with the sides slightly rounded; base widely sinuate, discal impression distinct and narrow. Scutellum with a semilunate impression. Elytra short oval or elongate oval, with the costæ more or less pale; clavus with a small yellowish-white spot near the apex; corium with pale markings, very variable, the spots and markings often (*pallipes*) becoming confluent, and sometimes leaving the whole corium, with the exception of the base and a few lateral spots, pale. Membrane pale, smoky; sometimes darker at the base, with the cell-nerves black; cells with an oval dark spot in each. Legs pale, thighs

more or less spotted; tibiæ and tarsi with their extreme apices black; the former in dark varieties more or less dark at the base. Antennæ: 1st joint pale, 2nd pale at the apex, 3rd and 4th black.

Length 1½—2 lines.

Common on the south coast; Worthing, Littlehampton; also at Chobham, &c.

14. *saltatoria*, Linn. (Pl. XII. fig. 7.)
= *fucicola*, Dougl. & Scott.
= *marginella*, Dougl. & Scott.
Var. = *vestita*, Dougl. & Scott.

Exceedingly like the preceding, of which it may be but a variety. It differs in having the markings on the elytra more numerous, more decided, and without the tendency to spread observable in that species. The spots get paler, but they retain their form, and I have never seen any specimens with pale elytra. Although so closely allied to the above that I cannot describe the differences in words, yet there is a general look about *saltatoria* by which, I believe, anyone could distinguish it.

Length 1½—2 lines.

Common in damp places. Var. *vestita*, Scotland.

Var. *vestita*, Dougl. & Scott. Pubescence much denser, giving quite a golden aspect to the specimen.

I have placed under the two preceding heads what have been considered by some authors as six distinct species; but, after a careful examination of a great number of specimens of my own, as well as many kindly lent to me by Mr. Douglas and Dr. Power, I can come to no other conclusion. Even between the two species I have admitted I can see no distinguishing structural characters, and the markings vary to such an extent that it is only on their general style that one can place any reliance.

15. *elegantula*, Fall. (Pl. XII. fig. 14 (antenna).)
= *Flori*, Dohrn, &c.

Head, thorax and scutellum black, shining, covered with long, erect, black hairs; eyes very large and prominent; sides of the thorax converging rapidly in straight lines until they almost reach the anterior margin, then subparallel; discal transverse impression very wide and deep; base sinuate. Elytra black, dull, covered with long, black, erect hairs, and a fine golden adpressed pubescence; the lateral margins, from just below the base,

widely ochreous, the colour spreading at the apex and just above the middle, along the nerve of the corium; close to the apex, where the pale colour spreads inwards, is a small, round, clear, whitish spot, and on the disk are often a few irregular, glaucous or milky spots. Membrane very small, ochreous, the nerves dark. Legs testaceous. Antennæ black, apex of basal joint and sometimes a spot on the apical joint yellow.

Length $1\frac{1}{2}$—$1\frac{3}{4}$ line.

Rare; banks of the Thames, near Hammersmith, &c.

16. *Cocksii*, Curt. (Pl. XII. figs. 10 and 15 (antenna).)
= *elegantula*, Dougl. & Scott.

So like the preceding that it is unnecessary to do more than point out its distinguishing characters. The antennæ are considerably dilated at the apex, and the second joint is yellow, except at its extreme base. These characters are so pronounced that the species may be at once separated from *elegantula*.

Length $1\frac{1}{2}$—$1\frac{3}{4}$ line.

Not rare in damp places, *Sphagnum*, &c.

This is evidently not Costa's *geminata*, a very distinct species of which I have several from Dr. Ferrari of Italy, and which has been also named *venustula* by Mr. Scott, from a var. with the apical joint of the antennæ spotted.

17. *cincta*, H.-Schff. (Pl. XII. fig. 9.)

Somewhat like the two preceding species, but very different on examination. The surface has not the erect black hairs of the others, and the thorax is less rapidly constricted in front; the elytra are more elongate and the sides less rounded; the membrane much larger, &c. (These latter characters, however, probably depend on development. *Cincta* appears always to be found fully developed, whereas *elegantula* and *Cocksii* are almost always not so. I have a single specimen of *Cocksii* from South Europe, with the full membrane, and in this case the shape of the elytra is very similar to that of *cincta*.) The pale colour at the margin of the corium is much narrower, and does not spread either in the middle or at the apex. The antennæ are much thinner and black, the apex of the 1st joint only pale.

Length $1\frac{1}{2}$ line.

Not rare in damp places.

## *HYDRODROMICA.*

I. Head very long and narrow, widening in front .. .. *Hydrometra.*

II. Head short.

A. Antennæ four-jointed.

B. Rostrum four-jointed .. .. .. .. *Gerris.*

BB. Rostrum three-jointed.

C. All the tarsi two-jointed .. .. .. .. *Microvelia.*

CC. At least the two posterior pairs of tarsi three-jointed.

a. Antennæ short, not nearly as long as the body; thighs without long projecting hairs *Velia.*

b. Antennæ long, nearly as long as the body; thighs with long projecting hairs .. .. *Mesovelia.*

AA. Antennæ with more than four joints .. .. *Hebrus.*

### Hydrometra.

1. *stagnorum*, De Geer. Fig. Dougl. & Scott, Brit. Hem. pl. xix. fig. 7.

Very elongate, black; more or less rufescent about the thorax; legs very long and thin, testaceous. Antennæ inserted almost at the apex of the head.

Length 5—6 lines.

Found walking about on the surface of water; common. Its peculiar shape and habit distinguish it from all its allies.

### Gerris.

I. Sixth segment of the abdomen produced at each side into a more or less elongate spine.

A. More or less ferruginous; first joint of the antennæ shorter than the second and third together .. .. .. .. .. .. *rufoscutellata.*

AA. Black; first joint of the antennæ longer than the second and third together.

a. Posterior tarsi about one-third as long as the tibiæ; second joint not half as long as the first .. .. .. .. *paludum.*

b. Posterior tarsi not one-fourth as long as the tibiæ; second joint more than half as long as the first .. .. .. *Najas.*

II. Sixth segment of the abdomen produced and broadly dentate at each side, but not spinose.

A. Thorax more or less rufescent in parts.

B. Larger and more robust; very wide across the region of the intermediate coxæ .. .. *costæ.*

BB. Smaller and narrower, not very wide across the region of the intermediate coxæ.

a. Longer; first joint of posterior tarsi almost twice the length of the second .. .. *thoracica.*

b. Shorter; first joint of posterior tarsi not nearly twice the length of the second .. *aspera.*

AA. Thorax entirely black.
  B. Very wide across the region of the intermediate coxæ; posterior tibiæ and tarsi together as long as the femora .. .. .. .. .. *gibbifera.*
  BB. Not very wide across the region of the intermediate coxæ; posterior tibiæ and tarsi together not so long as the femora.
    C. Posterior tibiæ and tarsi together not quite so long as the femora.
      a. Anterior femora chiefly luteous, ♂ with the abdomen not toothed beneath .. *lacustris.*
      b. Anterior femora black, red at the extreme base; sixth segment of abdomen toothed beneath, in ♂ .. .. .. .. *odontogaster.*
    CC. Posterior tibiæ and tarsi together about two-thirds the length of the femora .. .. .. *argentata.*

1. *rufoscutellata*, Latr. Fig. H.-Schff. Wanz. Ins. ix. pl. ccc. fig. 924.

Head black. Thorax rufescent, with a paler central line and a dark spot on each side of it near the anterior margin. Elytra brownish; the costæ black and the interstices whitish in their centres; legs and antennæ rufescent beneath, covered with silvery,—in some light golden, sericeous hairs.

Length $6\frac{1}{2}$ lines.

Carlisle.

2. *paludum*, Fab. Fig. H.-Schff. Wanz. Ins. ix. pl. ccc. fig. 926.

Entirely black above, except the edges of the abdomen; beneath silvery white. Thorax with a fine narrowly-raised central line; posterior angles somewhat prominent. Posterior femora distinctly longer than the tibiæ and tarsi together. First joint of the antennæ not quite so long as the other three together.

Length 6—$6\frac{1}{2}$ lines.

Ponds, &c., rare; Caterham, Eltham, &c.

3. *Najas*, De Geer. Fig. H.-Schff. Wanz. Ins. ix. pl. ccc. fig. 925.

Very like the preceding, but more elongate and generally without elytra. Posterior femora scarcely longer than the tibiæ and tarsi together. First joint of the antennæ as long as the other three together; it may also be distinguished by the characters given in the table at the head of the genus.

Length 6—$6\frac{1}{2}$ lines.

Common on running water, &c.

4. *costæ*, H.-Schff. Fig. H.-Schff. Wanz. Ins. ix. pl. ccci. fig. 927.

Dark blackish-brown. Thorax with a reddish-brown patch posteriorly, and with the dorsal line in front of the same colour. Elytra dark brown between the black costæ. Sides of the body reddish-yellow. Legs and antennæ brownish; the latter darker at the apex. Body silvery; much produced about the region of the intermediate coxæ, as in *gibbifera*, giving the insect a broad, rather clumsy appearance.

Length 6 lines.

Scotland, Loch Rannoch, &c.

5. *thoracica*, Schum. Fig. H.-Schff. Wanz. Ins. ix. pl. ccci. fig. 928.

Brownish-black; pronotum posteriorly and at the sides beneath yellowish; there is also a yellow spot indicating the position of the dorsal line on the anterior margin. Elytra brownish; the costæ black. Legs brown, paler beneath; first joint of the posterior tarsi nearly twice the length of the second; beneath silvery.

Length 5—5½ lines.

Common on ponds and streams.

6. *aspera*, Schum.

Very like the preceding, but smaller and shorter. Thorax shorter and rather wider; posteriorly the markings darker and more diffused. Elytra shorter. Legs of the same colour, but shorter; the second joint of the posterior tarsi nearly three-fourths as long as the first; beneath silvery.

Length 4½—5 lines.

Moss; Moran, Fifeshire.

7. *gibbifera*, Schum. Fig. Dougl. & Scott, Brit. Hem. pl. xix. fig. 1.

Similar in shape to *G. costæ*, being very wide across the region of the intermediate coxæ. Black, covered with fine golden scales; dorsal keel of the thorax not very distinct. Legs brownish; the front pair pale at the base; first joint of the posterior tarsi very long, twice as long as the second.

Length 5—5½ lines.

Common on ponds and streams.

8. *lacustris*, Linn. Fig. H.-Schff. Wanz. Ins. ix. pl. ccci. fig. 930.

Like the preceding, but smaller; narrower, with a very

distinct dorsal carina to the thorax; the posterior legs shorter, the tibiæ and tarsi together not being so long as the femora; first joint of the tarsi shorter than in *gibbifera*.

Length 4—4½ lines.

Common on water.

9. *odontogaster*, Zett. Fig. H.-Schff. Wanz. Ins. ix. pl. ccci. fig. 931.

Very like *lacustris*, but if anything rather smaller; the front tibiæ black, except at their extreme base, which is red; posterior legs shorter; the ♂ at once distinguishable by the two teeth that project from the sixth abdominal segment beneath.

Length 3½—4 lines.

Not rare; Reigate, Gravesend, Lee, Esher, &c.

10. *argentata*, Schum. Fig. H.-Schff. Wanz. Ins. ix. pl. ccci. fig. 932.

The smallest of our species, very like the two preceding, but distinguishable by the very short posterior tibiæ and tarsi, which together are not nearly so long as the femora; it has also rather a brighter and more silvery appearance, there being often some silvery scales at the base of the thorax.

Length 3—4 lines.

Not common; Esher, Reigate, &c., &c.

### Microvelia.

1. *pygmæa*, Duf. Fig. Dougl. & Scott, Brit. Hem. pl. xix. fig. 3.

Very small, black; head with a line on each side, on the inner margin of the eye, silvery. Thorax very wide behind, with the angles produced and rounded; callosities and the front margin with a band of silvery hairs. Elytra grey, with paler grey or white markings. Legs with the femora at the base pale. Antennæ pale at the base of the first joint.

Length ¾ line.

Not rare in streams, &c.; generally undeveloped.

Undeveloped form, without elytra and with the thorax not so widened posteriorly.

VELIA.

1. *currens*, Fab. Fig. Dougl. & Scott, Brit. Hem. pl. xix. fig. 2.

Brown; head black. Thorax deeply punctured, with the anterior margin paler, and a bright silvery spot near each anterior angle. Elytra blackish, with two spots near the base, an oval spot in the middle, and a round small spot near the apex, white. Legs and antennæ brown. Posterior thighs in the ♂ denticulate and with two longer teeth on each. Connexivum yellow, spotted with black. The undeveloped form has no elytra.

Length 3½—4 lines.

Common in streams, &c., in the undeveloped form. Developed form rare.

MESOVELIA.

1. *furcata*, Muls. & R. Fig. Ent. Mo. Mag. vol. iv. pl. i. fig. 1.

Elongate, blackish-brown; thorax considerably widened posteriorly, posterior angles rather prominent and largely rounded; scutellum with a deep, transverse channel near the apex, the apex slightly elevated. Elytra pale whitish, very thin, the nerves very thick and black; apices divergent and pointed; connexivum luteous; legs luteous, finely hairy, the apices of the femora and tibiæ and the whole of the tarsi, black; antennæ three-fourths as long as the body, black.

Length 2 lines.

Trent; and several specimens lately taken elsewhere by Dr. Power.

Undeveloped form pale yellowish-green, more or less spotted with black.

HEBRUS.

1. *pusillus*, Fall. Fig. Dougl. & Scott, Brit. Hem. pl. xix. fig. 4.

Brownish-black, with fine, very short, silvery hairs. Thorax with a deep dorsal impression in front; sides rather deeply emarginate. Elytra with a pale spot on each side of the scutellum; membrane greyish-brown, with paler markings. Legs and antennæ testaceous.

Length 1 line.

Not rare; in ponds, *Sphagnum*, &c.

The undeveloped form is smaller, often has the head red, and is destitute of elytra.

## II. CRYPTOCERATA.

I. Scutellum large.
  A. Abdomen terminating in two long filaments .. *Nepidæ*.
  B. Abdomen without apical filaments.
    a. Species more or less oval and depressed .. *Naucoridæ*.
    b. Species more or less elongate, very convex *Notonectidæ*.
II. Scutellum very small, generally invisible .. .. *Corixidæ*.

### NEPIDÆ.

a. Body linear, elongate; filaments almost as long as the body .. .. .. .. .. .. .. *Ranatra*.
b. Body elongate, oval; filaments not half the length of the body .. .. .. .. .. .. .. *Nepa*.

#### Ranatra.

1. *linearis*, Linn. Fig. Dougl. & Scott, Brit. Hem. pl. xx. fig. 2.

Elongate, subcylindrical, dull luteous-brown. Thorax slightly constricted near the middle; base deeply emarginate. Elytra about $2\frac{1}{2}$ times as long as the thorax; body red above; apex terminating in two long filaments. Legs long; front pair with the coxæ more than half the length of the femora; tibiæ recurved, not half so long as the femora; tarsi without claws.

The tibiæ in the other pairs very long, straight; tarsi thin and with long claws.

Length—body without filaments, 16—18 lines.
  „ body with filaments, 30—33 lines.

Not common; in ponds, Wandsworth, Hammersmith, &c.

#### Nepa.

1. *cinerea*, Linn. Fig. Dougl. & Scott, Brit. Hem. pl. xx. fig. 1.

Luteous-brown, flat, wide. Thorax subtrapezoidal. Elytra with the sides rounded; apex somewhat pointed, their surface finely reticulated. Abdomen above red, terminating in two long filaments. Legs mottled; front thighs thick, deeply grooved and excavated beneath at the base.

Length 8—10 lines; with filaments, 12—14 lines.

Common in ponds, &c.

## NAUCORIDÆ.

a. Front tarsi distinct, two-jointed .. .. .. *Aphelocheirus.*
b. Front tarsi apparently in one piece, with the tibiæ without joints .. .. .. .. .. *Naucoris.*

### Aphelocheirus.

1. *æstivalis*, Fab. Fig. Dougl. & Scott, Brit. Hem. pl. xix. fig. 5.

Luteous-brown. Head, legs and some occasional markings paler, dull, short, very much depressed, oval; very finely wrinkled and rugose throughout. Thorax deeply emarginate in front; sides rounded, lateral margins with very short projecting hairs, set at regular intervals; base straight, very wide; sides of the elytra sinuate at the base. All the recent specimens have the elytra rudimentary, about twice the length of the scutellum. Abdomen with each segment produced at the sides backwards into a sharp spine-like tooth.

Length 4—5 lines.

Rare; near Norwich; Bagley Wood, Oxford; Eynsham Paper Mills, &c.

### Naucoris.

1. *cimicoides*, Linn. Fig. Dougl. & Scott, Brit. Hem. pl. xix. fig. 6.

Oblong-ovate. Head and thorax shining yellowish-green, in life; punctured with brown, the punctured portion forming a sort of darker spot on each side of the dorsal line. Elytra dull, very densely and finely punctured, greyish-brown. Connexivum pale, finely ciliate; apices of the segments darker; front femora very thick.

Length 5—6 lines.

Common in ponds, &c.

## NOTONECTIDÆ.

I. Rostrum four-jointed; tarsi two-jointed. (Species large and subelongate) .. .. .. .. .. *Notonecta.*
II. Rostrum three-jointed; tarsi three-jointed. (Species small and very short) .. .. .. .. .. .. *Plea.*

### Notonecta.

1. *glauca*, Fab. Fig. Dougl. & Scott, Brit. Hem. pl. xx. fig. 4 = var. *maculata*, Fab., &c.

Very variable in the colour of the elytra. Head and

thorax shining, pale ochraceous or greenish. Scutellum large, black, finely and shortly gold pubescent. Elytra either pale, more or less spotted with black-brown, or glaucous black, with two basal streaks pale; in the var. *maculata* the black-brown spots sometimes almost cover the whole elytra. Legs pale, the intermediate tibiæ toothed beneath.

Length 7—8 lines.

Common everywhere in ponds, &c.

### Plea.

1. *minutissima*, Fab. Fig. Dougl. & Scott, Brit. Hem. pl. xx. fig. 3.

Very small, short and convex, pale yellowish-white; surface reticulated. Head wider than the thorax in front, with a brown line down the centre; apices of the tarsi brown.

Length 1 line.

Common in ponds, &c.

## CORIXIDÆ.

I. Scutellum not visible.
  a. Thorax with transverse lines .. .. .. .. *Corixa.*
  b. Thorax without transverse lines .. .. .. *Cymatia.*
II. Scutellum visible .. .. .. .. .. .. *Sigara.*

### Corixa.

I. Thorax and elytra entirely smooth, not rastrate; asymmetry to left side in ♂.
  A. Larger, thorax with 16 or more lines .. *Geoffroyi.*
  AA. Smaller, thorax with 12—14 lines.
    a. Claws of intermediate legs longer than tarsi .. .. .. .. .. *affinis.*
    b. Claws of intermediate legs shorter than tarsi .. .. .. .. .. *Panzeri.*
II. Thorax and elytra more or less rastrate; asymmetry to right side in ♂.
  A. Posterior metatarsi conspicuously marked with black at the apex; ♂ without strigil.
  B. Clavus with longitudinal lines.. .. .. *Boldii.*
  BB. Clavus with transverse lines.
    C. Markings of elytra clearly defined.
    D. Spot on hind tarsus large and quadrate, or nearly so .. .. .. .. .. *præusta.*
    DD. Spot on hind tarsus small and triangular, placed at the inner apical angle.

E. Intermediate claws as long as, or longer than, the tarsi.
  a. Thorax in front with a slightly raised tubercle on the dorsal line .. *concinna.*
  b. Thorax in front without a slightly raised tubercle on the dorsal line .. *cognata.*
EE. Intermediate claws not so long as the tarsi.. *sodalis.*
CC. Markings so obscure as to be scarcely observable .. .. .. .. .. .. *Wollastoni.*
AA. Posterior metatarsi not spotted at the apex.
B. Corium not rastrate.
C. Thorax pale, with very narrow black lines, very much narrower than the intervening pale spaces .. .. .. .. .. *hieroglyphica.*
CC. Thorax with wider dark lines.
  a. Thorax with the dorsal line scarcely perceptible .. .. .. .. *lugubris.*
  b. Thorax with the dorsal line distinctly raised in front .. .. .. *Stâli.*
BB. Corium more or less rastrate.
C. Thorax without a decided central carina, generally with a slight tubercle near the anterior margin.
D. Larger species.
E. Clavus and corium dull, very rastrate.
  a. Thorax with 6 pale lines .. .. *Linnæi.*
  b. Thorax with 7—8 pale lines .. .. *Sahlbergi.*
EE. Clavus and corium more or less shining.
F. Thorax with 6—7 dark lines.
  a. Clavus with the basal lines very wide inwardly .. .. .. .. *striata.*
  b. Clavus with the basal lines not widened inwardly . .. .. .. *vernicosa.*
FF. Thorax with 8—9 dark lines.
  a. Lobes of prosternum narrow and twisted *Fallenii.*
  b. Lobes of prosternum broad .. .. *distincta.*
DD. Smaller species.
E. Intermediate tibiæ scarcely longer than tarsi; tarsi subequal in length to the claws .. *mœsta.*
EE. Intermediate tibiæ much longer than tarsi; tarsi much shorter than claws.
F. Thorax with 7—9 pale lines.
G. Transverse markings of the corium not interrupted by longitudinal dark lines .. *Fabricii.*
GG. Transverse markings of the corium interrupted by longitudinal dark lines.
  a. By two lines placed near the inner apical angle .. .. .. *limitata.*
  b. By three lines .. .. .. *semistriata.*
  c. By four lines, one at the inner posterior angle.. .. .. .. *venusta.*

FF. Thorax with 5—6 pale lines.
a. Thorax with 6 pale lines .. .. *fossarum.*
b. Thorax with 5 pale lines .. .. *Scotti.*
CC. Thorax with a distinct, raised, dorsal line.
D. Tibiæ much longer than the tarsi.
a. Thorax with 10—12 lines .. .. *carinata.*
b. Thorax with 8—9 lines .. .. *variegata.*
DD. Tibiæ and tarsi subequal in length .. .. *cavifrons.*

Pronotum and elytra not rastrate. *Macrocorix*, Thoms.

1. *Geoffroyi*, Leach. Fig. Dougl. & Scott, Brit. Hem. pl. xx. fig. 5.

Shining olive-brown. Head ochreous; thorax with 16 or more paler, transverse lines; corium and clavus with a few long scattered hairs, very finely and closely mottled with paler markings; beneath and legs testaceous. Distinguishable from the others of this section by its larger size, and the greater number of pale lines on the thorax.

Length 6 lines.

Common in ponds, &c.

2. *affinis*, Leach. Fig. Fieb. Spec. Coris. pl. i. fig. 5 (palæ).

Like the above, but smaller, and the pale markings rather more conspicuous; the palæ much shorter; the pale lines on the thorax fewer, &c. Claws of intermediate legs longer than the tarsi.

Length $4\frac{1}{2}$ lines.

Lee, Gravesend, &c. Not common.

3. *Panzeri*, Fieb. Fig. Fieb. Spec. Coris. pl. i. fig. 3 (palæ).

Very closely allied to the preceding, but at once distinguished by the much shorter intermediate claws, which are shorter than the tarsi, and also in having the tarsi decidedly longer in proportion to the tibiæ.

Length $4\frac{1}{2}$ lines.

Not very common. Esher, Gravesend, &c.

Pronotum and elytra more or less rastrate.
Posterior metatarsi conspicuously marked with black at the apex .. .. .. *Callicorixa*, B. White.

4. *Boldii*, Dougl. & Scott.

Upper surface finely rastrate, pronotum with 7—8 fine black lines. Elytra with transverse pale markings on the corium; the clavus with longitudinal zigzag markings

down the centre, and transverse markings at the sides; legs testaceous, the spot on the hind tarsus large, reaching quite across the joint.

Length 3 lines.

♀, Gosforth. Distinguishable by the longitudinal markings of the clavus. I have never seen the species.

5. *præusta*, Fieb. Fig. Spec. Coris. pl. i. fig. 17. Var. *socia*, D. & S.

Dull olive-brown, with paler markings. Thorax with 9—10 rather irregular pale lines; clavus with pale transverse bars, the markings becoming irregular towards the apex; corium with irregular transverse wavy markings. Legs testaceous, spot on the hind tarsi large, quadrate or subtrapezoidal (var. *socia*).

Length 3 lines.

Not rare; Lee, Reigate, Scotland, &c.

6. *concinna*, Fieb. Fig. Fieb. Spec. Coris. pl. ii. fig. 9 (palæ).

Very like the above, but with the markings of the thorax rather more regular, and those of the clavus rather less regular. Dorsal line of the thorax indicated by a slight tubercle in front. The most conspicuous character is the small spot on the hind tarsus, which only just fills the inner apical angle of the 1st joint, and the inner basal angle of the 2nd. The palæ also are much longer than in *præusta*.

Length 3 lines.

Lewisham, Lee and Esher.

7. *cognata*, Dougl. & Scott.

Very like the preceding, but differs from it in not having any indication of a tubercle on the anterior margin of the thorax; it is also, if anything, rather smaller and of a yellower colour, and has the spots on the hind tarsi more pronounced and not extending on to the 2nd joint. The palæ in the ♂ are also very different.

Length $2\frac{3}{4}$—3 lines.

Scotland; Loch Grienan and Loch Leven.

8. *sodalis*, Dougl. & Scott.

Like the two preceding, but distinguishable by the shorter claws of the intermediate legs, which are distinctly shorter than the tarsi.

Length 3 lines.

Gosforth.

9. *Wollastoni*, Dougl. & Scott.

Differs from all the preceding by its uniform dull colour and almost obsolete markings; the corium is unicolorous, except at the base, where a few paler transverse markings are observable; the spots on the hind tarsi are also more elongate, and the entire insect is very slightly larger.

Length $3\frac{1}{2}$ lines.

Hebden Bridge, Argyleshire and Rannoch.

Posterior metatarsi not spotted with black at the apex. Corium not rastrate.

10. *hieroglyphica*, Duf. Fig. Fieb. Spec. Coris. pl. i. fig. 20 (pala).

Pale ochreous-white; the thorax with 7—9 very fine black lines; dorsal line slightly raised in front. Elytra: clavus very irregularly barred transversely; corium with smaller mottling than the clavus, the pale colour decidedly dominant.

Length $2\frac{3}{4}$ lines.

Not uncommon in ditches, &c.

11. *lugubris*, Fieb. Fig. Spec. Coris. pl. i. fig. 10 (pala).

Differs from the above in being darker, the dark lines of the thorax being almost as wide as the pale ones, and the darker colour being dominant on the elytra.

Length $2\frac{3}{4}$ lines.

Not uncommon in ditches, &c.

12. *Ståli*, Fieb.

Exceedingly like *lugubris*, but rather darker, and with a decided tubercle indicating the dorsal line on the anterior margin.

Length $2\frac{3}{4}$ lines.

Not uncommon in ditches, &c.

Corium more or less rastrate; dorsal line not distinctly raised for half or more of its length.

LARGER SPECIES.

13. *Linnæi*, Fieb. Fig. Spec. Coris. pl. vi. fig. 4 (pala).

Black, dull, very rastrate; thorax with 6 well-marked, pale lines; clavus transversely barred with pale lines, straight at the base and more or less irregular and wavy towards the apex; corium with narrow, fine, wavy, transverse lines; beneath, head and legs pale.

Length $3\frac{3}{4}$ lines.

Common in ponds, &c.

14. *Sahlbergi*, Fieb. Fig. Spec. Coris. pl. ii. fig. 3.
Very like the above, but at once distinguishable by the longer thorax, by the greater number of pale lines (8—9) on it, and the pale apex of the corium; it is also slightly larger.
Length $3\frac{3}{4}$—4 lines.
Common in ponds, &c.

15. *striata*, Fieb. Fig. Spec. Coris. pl. ii. fig. 4 (pala).
Differs from either of the above by its more shining and less rastrate surface. Thorax with 6—7 dark lines, about equal in width to the intervening pale ones. Clavus irregularly marked with pale transverse lines, the basal ones widening inwardly. Corium with transverse, interrupted, pale markings; beneath, head and legs pale.
Length $3\frac{1}{2}$ lines.
Common in ponds, &c.

16. *vernicosa*, Walleng. = *Douglasi*, Fieb.
Very like *striata*, but has the thorax more deeply rastrate, and the transverse dark lines somewhat impressed; the pale basal markings of the clavus also are not widened inwardly as in that species.
Length $3\frac{1}{2}$ lines.
Fens.

17. *Fallenii*, Fieb. Fig. Spec. Coris. pl. ii. fig. 12 (palæ).
Distinguishable from either of the preceding by the greater number of transverse dark lines (8—9) on the thorax, by its more distinct and regular markings, and by the shape of the palæ in the ♂, which are subtriangular; lateral angles of the thorax acute.
Length $3\frac{1}{2}$ lines.
Common in ditches, &c.

18. *distincta*, Fieb. Fig. Spec. Coris. pl. ii. fig. 13 (palæ).
Exceedingly like *Fallenii*, but differing in the slightly longer thorax, the rather wider, black, transverse lines across it, the obtuse lateral angles, and the short palæ of the ♂, which have the posterior margin regularly rounded.
Length $3\frac{1}{2}$ lines.
Lewisham, Reigate, &c.

SMALLER SPECIES.

19. *mœsta*, Fieb. Fig. Spec. Coris. pl. ii. fig. 17.

A short, obscurely-marked species, with a very short thorax and large head; at once distinguishable by the form of the intermediate legs, which have the tarsi only very slightly shorter than the tibiæ, and the claws subequal to the tarsi.

Length $2\frac{1}{2}$ lines.

Common in ponds, &c.

20. *Fabricii*, Fieb. Fig. Spec. Coris. pl. ii. fig. 16 (palæ).

= *nigrolineata*, Fieb.
= *perplexa*, D. & S.
= *borealis*, D. & S.
= *Whitei*, D. & S.
= *decora*, D. & S.
= *dubia*, D. & S.

Moderately rastrate, more or less shining; brownish-black, with pale markings.

A very variable species in colour; but I can detect no structural character to separate the varieties from each other. *Nigrolineata* is the palest var., *borealis* the darkest. This species is separable from its allies by the short, rather wide, smooth tubercle on the anterior margin of the thorax.

Length $2\frac{1}{2}$ lines.

Not rare; in ditches, &c.

Mr. Douglas, in Ent. Mo. Mag. 1875, Nov., unites *decora* and *perplexa* with *Whitei*, and *dubia* with *nigrolineata*. Dr. J. Sahlberg, in his "Synopsis Amphibicorisarum," &c., unites *decora* and *dubia* with *Fabricii* and *nigrolineata*. I feel little doubt, however, that I am right in referring all these varieties to one species.

21. *limitata*, Fieb. Fig. Spec. Coris. pl. ii. fig. 20.

A pale species, with very distinct black markings; longer and narrower than the preceding; the markings on the corium interrupted near the inner apical angle by two black, longitudinal lines; intermediate claws very long, as long or longer than the tibiæ.

Length $2\frac{3}{4}$ lines.

Common in ditches, ponds, &c.

22. *semistriata*, Fieb. Fig. Spec. Coris. pl. iii. fig. 2 (palæ).

Darker than *limitata*, and at once distinguishable by the pale markings of the elytra being divided into four distinct series by reason of three dark, longitudinal lines; extreme apical margin of corium pale.

Length $2\frac{3}{4}$ lines.

Not rare; in ditches, &c.

23. *venusta*, Dougl. & Scott.

Very like the preceding, of which it may prove to be only a variety. Brown, with paler markings, very rastrate. Thorax with 6—7 impressed black lines; corium with four longitudinal lines, the first placed at the inner apical angle; extreme apex pale, legs pale, intermediate claws about equal in length to the tibiæ, much longer than the tarsi.

Length $2\frac{1}{4}$ lines.

Rothsay and Carlisle.

24. *fossarum*, Leach. Fig. Fieb. Spec. Coris. pl. ii. fig. 15.

Var. *prominula*, Thoms.

Rather longer and with clearer markings than *mœsta*, from which the shape of the intermediate legs at once separates it; the thorax has six distinct, pale lines across it. The head, between the eyes, is produced and slightly rounded, the posterior margin deeply emarginate.

Length $2\frac{1}{2}$ lines.

Common in ponds, &c.

25. *Scotti*, Fieb.

Very like the above, but rather smaller; the head more depressed above, and somewhat angular in front, and very much excavated behind; the posterior angle of the eye almost touching the anterior angle of the thorax, which is traversed by only five pale lines.

Length $2\frac{1}{4}$ lines.

Argyleshire.

Thorax with a distinct, raised, dorsal line.

26. *carinata*, Sahlb.

= *Sharpii*, Dougl. & Scott.

About the shape of *Fallenii*, &c. Thorax rather deeply rastrate, with 10—12 impressed, dark, transverse lines; dorsal line raised, and very pronounced to beyond the

middle; markings of the elytra obscure and rather small; surface with scattered, long, pale hairs. Legs dusky.

Length 4 lines.

Scotland, Inverness-shire, &c.

27. *variegata*, Walleng.

= *rubricata*, Dougl. & Scott.

Very like *carinata*, but rather smaller, more brightly coloured, with paler legs and head. The thorax is shorter, and has fewer transverse lines, 8—9, and the central carina is less pronounced.

Length 3½ lines.

Scotland, &c.; not rare.

28. *cavifrons*, Thoms.

= *alpestris*, Doug. & Scott.

This very distinct species cannot be confounded with any other here described; its large, rounded eyes and bulbous head, and long intermediate tarsi, which are as long as the tibiæ, distinguish it at once. The thorax is very rastrate, and has a short, distinctly raised, dorsal line in front, reaching to a little behind the middle; the elytra are rather obscurely marked, and have scattered, long, pale hairs. Legs dusky.

Length 4 lines.

Inverness-shire; at an elevation of 2,000 feet.

## Cymatia.

I. Larger. Thorax nearly as long as the head .. .. *Bonsdorffii*.

II. Smaller. Thorax very short, not half so long as the head .. .. .. .. .. .. .. *coleoptrata*.

1. *Bonsdorffii*, Sahlb. Fig. Dougl. & Scott, Brit. Hem. pl. xxi. fig. 6.

Head ochreous-brown. Thorax darker, smooth, with a raised median line in front. Elytra obscure brown, with paler transverse markings; in some specimens these markings are scarcely observable. Legs testaceous.

Length 2½ lines.

Cambridge Fens.

2. *coleoptrata*, Fab. Fig. H.-Schff. Wanz. Ins. ix. fig. 915.

Much smaller than the preceding. Head very large and long, obscure brown. Thorax the same colour as the head, very short and transverse; anterior margin

with a small tubercle in the middle, indicating the position of the dorsal line. Elytra dull olive-brown; corium with two longitudinal darker markings. Legs ochreous.

Length $1\frac{3}{4}$ line.

Cambridge Fens; near London, &c.

### Sigara.

1. Thorax as long or nearly as long as the head .. .. *minutissima.*
2. Thorax not nearly as long as the head .. .. .. *Scholtzii.*

1. *minutissima*, Linn.

Var. *Toweri*, Dougl. & Scott.

Head yellowish-white, with a dark spot on the vertex. Thorax brown; the base, and sometimes the dorsal line, pale. Elytra yellowish-white; a large triangular spot on the clavus, a spot on the margin of the corium below the base, an irregular band below the middle, and a spot above the apex, brown. Legs pale; tarsi dark outwardly.

Length $\frac{7}{8}$ line.

Fens; near Chobham; New Forest.

Var. *Toweri*, Dougl. & Scott, appears to me to be only a darker, more strongly marked variety of this species.

2. *Scholtzii*, Fieb.

Rather larger than the above and paler; the markings on the elytra much smaller and not arranged in bands. The short thorax, however, will at once distinguish it from the preceding.

Length 1 line.

Littlehampton, St. Leonards Forest, &c.

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## ADDENDA.

Gen. Sehirus, p. 120, line 9 from bottom, after "b. About two lines long, blue black," add—

I. Margin of elytra white; apical joint of antennæ much longer and thicker than third .. .. *albomarginatus.*
II. Margin of elytra brownish; apical joint of antennæ subequal to third .. .. .. *picipes*, Fall.

and after "*albomarginatus*," p. 121, insert following description:—

6. *picipes*, Fall.

Very like the preceding, but distinguishable at once by the smaller apical joint to the antennæ. The colour of

the margins of the elytra is much more obscure, and visible only on their basal half; the membrane also is of a whiter, more opaque colour.

Length 2 lines.

Esher, Hampstead, Chobham, &c.

Gen. TRAPEZONOTUS, p. 148, add—

3. *dispar*, Stål.

Rather larger and more clearly marked than *agrestis*, and, according to Mr. Douglas, different in habits (*vide* Ent. Mo. Mag. xii. p. 223), but I really see no characters by which to distinguish it satisfactorily from *agrestis*.

Page 274. Gen. LYGUS, in Division B., add—

a. Clavus concolorous .. .. .. *contaminatus.*
b. Clavus brownish .. .. .. *viridis.*

And after "*contaminatus*," p. 275, add—

= *sulcifrons*, Dougl. & Scott; and after the description of "*contaminatus*"—

2A. *viridis*, Fall.

= *contaminatus*, Dougl. & Scott.

Very like the preceding, but with the thorax more raised posteriorly; the head wider between the eyes, which are smaller and less prominent; the clavus brownish, the spots of the membrane larger, and the spot at the inner angle of the corium larger and less well defined.

Length 3 lines.

On *Spiræa*, &c.; Reigate, Scotland, Croydon, Darenth, Esher, &c.

Page 257, line 9 from the foot of the page in Division G., dele "elongate depressed, elytra parallel-sided," leaving only "tibiæ with pale spines;" and then subdivide Division G. thus—

a. Elongate, depressed; elytra parallel-sided *Phylus.*
b. Not elongate, depressed and parallel-sided .. .. .. .. .. *Plesiodema.*

and add, p. 300, before "ATRACTOTOMUS"—

PLESIODEMA.

1. *pinetellum*, Zett.

Brownish; elytra in the ♀ testaceous. Antennæ luteous; second joint incrassated and compressed in ♂. Elytra

much longer than abdomen; cuneus and cubital nerve of the corium brownish-ochreous; base of the cuneus pale. Cell nerves brownish-testaceous, a little spot below the apex of the cuneus transparent. Legs testaceous; tarsi darker.

Length $1\frac{1}{4}$ line.

Perth.

Page 305, after "*Psallus varians*," insert—

14A. *diminutus*, Kirsch.

Very like the preceding, but smaller, and with the apical joint of the antennæ rather longer in proportion to the third.

Length $1\frac{1}{4}$ line.

The small size, which seems to be a pretty constant character, will best serve to distinguish this species. I believe it occurs generally with *P. varians*, of which I have hitherto considered it only a variety.

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CORRIGENDUM.

Page 118, line 12 from bottom, for "*Phytocoridæ*," read "*Capsidæ*."

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EXPLANATION OF PLATE XII.

Fig. 1. Salda littoralis.
2. „ C-album.
3. „ orthochila.
4. „ morio.
5. „ arenicola.
6. „ marginalis.
7. „ saltatoria.
8. „ Scotica.
9. „ cincta.
10. „ Cocksii.
11. „ pilosa.
12. „ pilosella.
13. „ opacula.
14. „ elegantula (antenna).
15. „ Cocksii (antenna).

# PROCEEDINGS

OF THE

# ENTOMOLOGICAL SOCIETY OF LONDON

FOR

# 1876.

February 2, 1876.

Sir Sidney Smith Saunders, C.M.G., Vice-President, in the chair.

*Donations to the Library.*

The following donations were announced, and thanks voted to the donors:—'Proceedings of the Royal Society,' vol. xxiv., no. 165; presented by the Society. 'Pinacographia—Illustrations of more than 1000 Species of North-West European Ichneumonidæ sensu Linnæano,' part 2; by the Author, M. S. C. Snellen van Vollenhoven. 'Transactions of the Linnean Society of London,' 2nd Series, Zoology, vol. i., part 2; by the Society. 'Bulletin de la Société Impériale des Naturalistes de Moscou,' 1875, no. 2; by the Society. 'L'Abeille,' 1875, tome xiii., livr. 20 & 21; by the Editor. 'The Naturalist: Journal of the West Riding Consolidated Naturalists' Society,' vol. i., no. 6; by the Society. 'Catalogus Coleopterorum Lucanoidum:' auctore Major F. J. Sidney Parry, F.L.S.—Editio tertia; by the Author. 'The Zoologist' for February; by the Editor. 'Newman's Entomologist' for February; by the Editor. 'The Entomologist's Monthly Magazine' for February; by the Editors. 'Notes on the Yucca Borer (*Megathymus Yuccæ*);' by the Author, Charles V. Riley, M.A., Ph.D. 'Petites Nouvelles Entomologiques,' nos. 137—140; by the Editor. 'Monographie du Genre Erotyle,' par P. A. J. Duponchel; by Mr. Edward Sheppard.

*Election of Members.*

Herbert Fortescue Fryer, Esq., of Chatteris, Cambridgeshire, and Edward Young Western, Esq., of Craven Hill, Bayswater, were balloted for and elected Ordinary Members.

*Paper read, &c.*

Mr. M'Lachlan directed attention to an article, by M. Flaminio Baudi, in the 'Petites Nouvelles Entomologiques,' respecting the habits of Cychrus cylindricollis, which he had taken on Monte Codeno feeding on the body of a snail (*Helix frigida*), into the shell of which the beetle was enabled to thrust its head and long narrow prothorax. Some interesting remarks were made by Mr. Bates and others on the peculiar structure and habits of the insect, which appeared to have been found only on a very sterile portion of the plateau of the mountain, and in no other part.

A valuable paper was communicated by Dr. D. Sharp, entitled "Contributions to an Insect Fauna of the Amazon Valley—(Staphylinidæ)." Of this important group of Coleoptera 487 species were enumerated as inhabiting the valley, of which 463 were described as new—suggesting forcibly how little is really known of the Staphylinidæ of Tropical America. Dr. Sharp also stated that he had devised a method of covering and hermetically sealing the type specimens, which, he believed, would accomplish their almost complete preservation, and that he hoped soon to be able to publish a description of the method. The author concluded with remarking on the great importance of certain sexual characters in distinguishing the species.

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March 1, 1876.

Professor J. O. Westwood, M.A., President, in the chair.

*Donations to the Library.*

The following donations were announced, and thanks voted to the donors:—'Proceedings of the Royal Society,' vol. xxiv., no. 166; presented by the Society. 'Philosophical Transactions of the Royal Society,' 1871, parts 1 and 2; 1872, parts 1 and 2; 1873, parts 1 and 2; 1874, parts 1 and 2; 1875, part 1; by the Society. 'The Journal of the Linnean Society—Zoology,' vol. xii., nos. 60—62; by the Society. 'The Naturalist,' vol. i., no. 7; by the West Riding Consolidated Naturalists' Society. 'The Zoologist' for March; by the Editor. 'Newman's Entomologist' for March; by the Editor. 'The Entomologist's Monthly Magazine' for March; by the Editors. 'Journal of the Quekett Microscopical Club' for January; by the Club. 'Canadian Entomologist,' vol. vii., no. 12; by the Editor. 'Transactions of the American Entomological Society' for March; by the Society. 'The American Naturalist,' vol. x., nos. 1 and 2; by the Editor. 'L'Abeille,' tome xiii., livr. 23; by the Editor. 'Mittheilungen der Schweizerischen Entomologischen Gesellschaft,' vol. iv, heft 8; by the Editor. 'Briefe an C. Th. E. v. Siebold

von R. v. Willemoes-Suhm,' nos. ii.—vi.; by Prof. Siebold. 'Annales de la Société Entomologique de Belgique,' tome xviii., fasc. iii.; by the Society.

*Election of Members.*

Dr. G. Kraatz, President of the Entomological Society of Berlin, and Mr. Clemens Müller, also of Berlin, were balloted for and elected Foreign Members; and Mr. Oliver E. Janson, hitherto a Subscriber, was elected an Ordinary Member.

*Exhibitions, &c.*

Mr. Jenner Weir exhibited two grasshoppers in an undeveloped state, taken by himself in the Rhone Valley, *in copulâ*—a peculiarity which was frequently noticed amongst the Hemiptera. He also exhibited a remarkable moth from Madagascar belonging to the family Uraniidæ, bearing a very striking resemblance to a Papilio, except that it had the antennæ of a moth.

Mr. Edmund Y. Western exhibited some Coleoptera, taken chiefly in Switzerland.

Mr. W. Arnold Lewis exhibited a specimen of Argynnis Dia taken in England by Mr. Wallace A. Smith, whom he presented to the Meeting. Mr. Smith stated, in answer to various enquiries by the President, that he captured the specimen himself in the year 1872, while sunning itself on some palings near his own house at Worcester Park, Surrey, and it was on an exceedingly hot day, though he did not remember the month. He had only commenced collecting insects in the preceding summer, and it was the first Fritillary he had ever had in his possession, and the specimen had never been out of his possession since. He was unable to identify the species at the time, and was not aware of the rarity of the insect until he showed it to Mr. Lewis. The specimen was handed to the Members and pronounced to be undoubtedly an Argynnis Dia. Mr. Lewis remarked that he had seen so many attacks in past publications on those who asserted that Dia was a British species, that he was very desirous that the testimony connected with the present capture should be recorded.

The President noticed a paragraph in 'Newman's Entomologist' stating that the collection of butterflies and moths formed by the late Mr. Henry Doubleday was now being exhibited at the Bethnal Green Museum; and he hoped that special care would be taken of it, as it was by far the most valuable collection of British Lepidoptera in existence.

Mr. Dunning exhibited a pair of Caradrina morpheus taken *in copulâ* in the Regent's Park, the male being dead, and, although still attached to the female, several eggs were laid and larvæ hatched therefrom in the box in which they were placed.

Mr. Bates read a letter from Mr. Trevey Blackmore to Mr. M'Lachlan, stating that he was much interested in observing a notice in the 'Proceedings' of this Society respecting the habits of Cychrus cylindricollis,

reported by M. Baudi to feed on snails. He had already called attention (in the 'Entomologist's Monthly Magazine,' vol. xi., p. 214) to the fact that Carabus stenocephalus, *Fairm.*, fed on snails, which in Morocco were so very abundant as to form a marked feature in the landscape by covering the bushes so thickly as to resemble, at a distance, clusters of blossom. He had captured in all eighteen specimens of this scarce Carabus, and of these fifteen were obtained either feeding on snails or climbing up bushes of Retama, which were covered with snails, especially Helix planata. The Carabus having an unusually long head, and the prothorax being narrowed anteriorly, enabled it to thrust its head and prothorax a considerable distance within the shell in search of its food. It belonged to a group comprising several species found in North Africa, which much resembled Cychrus in appearance, and which possessed characters sufficiently marked to entitle them to form, if not a genus distinct from Carabus, at least a subgenus of Carabus. One of them (possibly a *var.* of C. stenocephalus) occurred in the more northern parts of the Atlantic coast of Morocco, and had been named by Fairmaire C. cychrocephalus; and another species (*C. Aumonti*, Lucas), had been found at Oran and in the Angera Mountains near Ceuta, which had a far narrower prothorax; but as he had not met with it himself he was unacquainted with its habits. He believed that other Carabi might be found whose habits were similar to those of C. stenocephalus.

Mr. Bates made some remarks on this as an instance of the modification of a form to adapt the insect to a difference of habit: it could not be considered a case of affinity, Carabus and Cychrus being totally distinct genera. The President, however, considered that the form was simply adapted to the purpose for which the insect was created.

The President drew attention to a subject now being much discussed in Germany and the United States of America, with reference to the spring and autumn broods of Lepidoptera, which proved to be modifications of the same species. He was much interested in the subject, and would be greatly obliged to any entomologist who would furnish him with observations and notes as to the different broods.

*Papers read.*

The President read a paper entitled "A Dipterological Note from Pompeii," containing remarks on the habits of the genus Bombylius. Also descriptions of some new species of Tipulidæ in the British Museum, accompanied by drawings, showing them to be furnished with hind legs of unusual length.

Mr. John Scott contributed a Monograph of the British species belonging to the Hemiptera-Homoptera (family Psyllidæ), together with a description of a genus which might be expected to occur in Britain.

April 5, 1876.

Prof. J. O. Westwood, M.A., F.L.S., &c., President, in the chair.

*Additions to the Library.*

The following donations were announced, and thanks voted to the donors:—'Proceedings of the Royal Society,' No. 167; presented by the Society. 'Exotic Butterflies,' by the Author, W. C. Hewitson, Esq. 'The Naturalist; Journal of the West Riding Consolidated Naturalists' Society,' vol. i., nos. 8 and 9 (for March and April); by the Society. 'The Zoologist' for April; by the Editor. 'Newman's Entomologist' for April; by the Editor. 'The Entomologist's Monthly Magazine' for April; by the Editors. 'Psyche,' Organ of the Cambridge (Mass.) Entomological Club, no. 22; by the Editor. 'Annual Reports of the Trustees of the Museum of Comparative Zoology at Harvard College, Cambridge,' for 1874 and 1875; by the Trustees. 'Bulletin of the Buffalo Society of Natural Sciences,' vol. iii., no. 1; by the Society. 'The Canadian Entomologist,' vol. viii., no. 1; by the Editor. 'Traité Elémentaire d'Entomologie,' tome ii., fasc. i. (Orthoptères et Neuroptères); by the Author, Maurice Girard. 'Sur le Prosopistoma;' by the Author, M. Emile Joly. 'L'Abeille,' tome xii., nos. 168, 169; by the Editor. 'Bulletin de la Société d'Histoire Naturelle de Toulouse,' 1875, fasc. 4; by the Society. 'Bulletino della Società Entomologica Italiana,' 1875, trimestre 4; by the Society. 'Tijdschrift voor Entomologie—Achtiende Deel,' 3e & 4e Aflevering; 'Repertorium der Acht Eerste Jaargangen,' 1858—1865; by E. A. de Roo van Westmaas. 'Repertorium betreffende den Negenden tot en met den Zestienden Jaargang,' 1866—1873; by F. M. van der Wulp. 'Ueber das Aufreten der Wanderheuschrecke am Ufer des Bielersee's,' von Albert Müller, in Basel; by the Author. 'Gita Entomologica all' Isola di Pantellaria di Enrico Ragusa'; by the Author. 'Mission Scientifique au Mexique et dans l'Amérique Centrale — Sixième Partie, Etudes sur les Orthoptères,' par M. Henri de Saussure; by the Author. 'Petites Nouvelles Entomologiques,' nos. 143 & 144; 'Monographic Revision and Synopsis of the Trichoptera of the European Fauna,' part iv.; by the Author, Robert M'Lachlan, Esq.

'Historical Sketch of the Generic Names proposed for Butterflies;' 'The Tertiary Physopoda of Colorado;' 'Notice of the Butterflies and Orthoptera collected by Mr. George M. Dawson, as Naturalist of the B. N. A. Commission;' 'Synonymic List of the Butterflies of North America, North of Mexico (Nymphales);' 'Entomological Notes,' iii. and iv.; 'Note sur l'Œuf et le jeune age de la chenille d'Œneis Aello;' 'The Distribution of the Insects in New Hampshire;' presented by the Author, Samuel H. Scudder.

'Recensio Orthopterorum: Revue Critique des Orthoptères décrits, par

Linne, De Geer et Thunberg,' par C. Stål, 1 & 2: 'Genera Tingitidarum Europæ,' disposuit C. Stål; presented by the Author.

'Ofversigt af Kongl. Vetenskaps-Akademiens Förhandlingar:'—'Genera Coreidarum Europæ,' disposuit C. Stal; 'Genera Lygæidarum Europæ,' disposuit C. Stål; 'Genera Reduviidarum Europæ,' disposuit C. Stål; 'Orthoptera quaedam africana,' descripsit C. Stal; 'Genera Pentatomidarum Europæ,' disposuit C. Stal; 'Orthoptera nova,' descripsit C. Stål; 'Entomologiska anteckningar,' af Carl Cederström; 'Coleoptera Caffrariæ, annis 1838—1845, a J. A. Wahlberg collecta: *Curculionides*,' descripsit Ol. Im. Fahraeus, Div. 1—Adelognathi (*Lacord.*); Div. 2—Phanerognathi (*Lacord.*); Fam. Brenthidæ, Anthribidæ et Bruchidæ, descriptæ a Ol. Im. Fahræus; Fam. Scolytidæ, Paussidæ, Bostrichidæ et Cioidæ, descriptæ a Ol. Im. Fahraeus; Longicornia, descripsit Ol. Im. Fahraeus, nos. 1 & 2. 'Oedemopsis Rogenhoferi, Tschek, funnen på Hunneberg i Westergötland,' af A. E. Holmgren: 'Insekter från Nordgrönland, samlade af Prof. A. E. Nordenskiold ar 1870,' Granskade och beskrifna af A. E. Holmgren; 'Dispositio methodica Exochorum Scandinaviæ,' Auctore Aug. Emil. Holmgren; 'Skandinaviens och Finlands Acandthiider beskrifne af O. M. Reuter: 'Acanthiidæ Americanæ,' descriptæ ab O. M. Reuter; 'Skandinaviens och Finlands, Aradider, Reduviider, & Nabider, beskrifne af O. M. Reuter; 'Nabidæ novæ et minus cognitæ,' Bidrag till Nabidernas kännedom af O. M. Reuter: 'Nya Svenska Capsider,' antechnade af O. M. Reuter; 'Förteckning öfver Svenska Podurider af Tycho Tullberg; 'Bidrag till kannedom af Fjarilfaunan på St. Barthelemy,' af H. D. J. Wallengren; 'Skandinaviens Pyralider och Choreutider,' beskrifne af H. D. J. Wallengren; 'Bidrag till Södra Afrikas Fjarilfauna,' af H. D. J. Wallengren; presented by the Royal Swedish Academy of Sciences at Stockholm.

'Bihang till K. Svenska Vetenskaps-Akademiens Förhandlingar:'—'Recherches sur le système des Mantides,' par C. Stål; 'Recherches sur le système des Blattaires,' par C. Stal; 'Om de Skandinaviska arterna af Ophionidslägtet Campoplex,' af A. E. Holmgren; 'Index Specierum Noctuarum et Geometrarum in Scandinavia hucusque detectarum,' auctore H. D. J. Wallengren; presented by the Royal Swedish Academy of Sciences at Stockholm.

'Kongl. Svenska Vetenskaps-Akademiens Handlingar:'—'Enumeratio Hemipterorum,' Bidrag till en Förteckning öfver alla hittills kanda Hemiptera jemte systematiska Meddelanden,' af C. Stål, 4; 'Sveriges Podurider,' beskrifna af Tycho Tullberg; presented by the Royal Swedish Academy of Sciences at Stockholm.

### *Election of Members.*

The following gentlemen were balloted for and elected Ordinary Members of the Society:—Joseph William Douglas, Esq., of Lee, Kent: Edward C.

Rye, Esq., of Parkfield, Putney; Charles Fenn, Esq., of Lee, Kent; George Lewis, Esq., of Queen's Road, Putney; John Dunning Kay, Esq., of Leeds; and William Charles Copperthwaite, Esq., of the Lodge, Malton. Also, Benjamin A. Bower, Esq., of Lee, Kent, was balloted for and elected a Subscriber.

*Exhibitions, &c.*

Mr. F. Bond exhibited a specimen of Xylina lambda, taken near Erith, in September last, by Mr. W. Marshall, being the fifth instance of its having been taken in Britain. Also Ebulea stachydalis, taken by himself at Kingsbury, Middlesex, in June, 1862.

Mr. Champion exhibited a specimen of Ægialia rufa, *Fab.*, taken by Mr. Sidebotham, of Bowdon, near Southport, and he brought specimens of Psammodius sulcicollis sent by Mr. Sidebotham for distribution amongst the Members.

The President made some observations respecting the habits of the common gnat, in continuation of his remarks at the meeting of 4th November, 1872. [See 'Proceedings,' 1872, p. xxxi.] Large numbers of females had again appeared in his house at Oxford, not a single male having been observed; and he believed that they had hybernated in the house, appearing during the first warm days of spring. He also remarked that Dr. Leconte's valuable collection of Coleoptera had been presented to the University at Cambridge, Massachusetts.

Sir Sidney S. Saunders exhibited two examples of Stylops Kirbii, taken on the wing by him at Hampstead, in the forenoon of the previous day. He had found eighteen males in all: one Andrena contained three undeveloped males. Mr. Enock followed up this exhibition by an account of his own captures of male Stylops at the same time. He captured eleven on the wing, and one Andrena was taken with four individuals.

Mr. Eaton stated that he was preparing a Supplement (dealing with the limitation of the genera) to his "Monograph on the Ephemeridæ" (Trans. Ent. Soc., 1871). A considerable amount of new material had been most kindly submitted to him by Mr. Robert M'Lachlan, of Lewisham, and M. Herman Albarda, of Leeuwarden, comprising specimens from almost all parts of the world. Amongst the most interesting were some specimens in fluid from South America, and a collection from Sumatra. From the Amazonian collection in spirits, it would appear that the deficiency in legs in Campsurus and some of its allies was due to their being shed with the pupa-skin when the insect obtained well-developed wings. In some forms all of the legs were then cast off by the female (this was apparently the case with Euthyplocia also); in others the anterior pair of legs was retained by the female, as it was seemingly by all males. The separation of the legs cast off takes place between the femur and the trochanter. The posterior

legs would be useless to them, as on attaining the complete winged stage of development they retain the subimaginal pellicle, and live but few hours in the air. From Lahat there were subimagines of a Cronicus, a genus known previously only from a fossil in amber from Prussia. Several new forms, whose existence was expected from analogy, were in these collections. The whole family seems to consist of associated series of genera. In every series the forms differ from one another in the number of setæ or wings; while in tarsi and neuration and eyes they are very much alike. Such are a form distinguishable from Lachlania by the female possessing three long setæ instead of two only; another differing from Potamanthus (restricted) in the middle seta being extremely short and minute; and another which resembled Siphlurus, excepting in the possession of a long intermediate seta instead of a minute rudiment of one. There were many new genera allied to the typical Leptophlebia, in addition to the series of species associated with it in the Monograph as sections, which will now be separated as genera from it.

The President exhibited some drawings which he had prepared of insects belonging to the Dipterous genus Systropus, of which he intended shortly to publish remarks on their transformations.

The Rev. R. P. Murray stated that he was preparing a *resume* of all the species of Japanese butterflies hitherto noticed, and that he would be grateful to any entomologist who could assist him with the loan of specimens.

Mr. Smith made some remarks on the distribution of some genera of Hymenopterous insects from New Zealand, a collection of which had been placed in his hands by Mr. C. M. Wakefield. He was followed by Mr. M'Lachlan, who remarked on the gradual extinction of the endemic Fauna of New Zealand, although introduced forms throve there in a remarkable manner.

Mr. M'Lachlan exhibited a series of a remarkable Trichopterous insect received from its discoverer, Fraulein Marie von Chauvin, of Freiburg, in Breisgau, described by Stein as Anomalopteryx Chauviniana. In the male the anterior wings were lanceolate and the posterior much abbreviated, whereas those of the female were normal, excepting that the posterior wings were smaller than usual. He also exhibited apterous females of Acentropus niveus received from Mr. Ritsema, of Leyden: and a slide with a full-grown female of the root-form of Phylloxera vastatrix, recently obtained by him (with many others) from a vinery near London that was greatly infested with the insect.

*New Part of 'Transactions.'*

The fifth Part of the 'Transactions' for 1875 (containing the title-page, index, &c.) was on the table.

May 3, 1876.

Sir Sidney Smith Saunders, C.M.G., Vice-President, in the chair.

*Additions to the Library.*

The following donations were announced, and thanks voted to the donors:—'Proceedings of the Scientific Meetings of the Zoological Society,' 1875, part 4; presented by the Society. 'The Naturalist: Journal of the West Riding Consolidated Naturalists' Society,' no. x., for May; by the Society. 'The Zoologist' for May; by the Editor. 'Newman's Entomologist' for May; by the Editor. 'The Entomologist's Monthly Magazine' for May; by the Editors. 'Nature,' nos. 336 to 339, for April; by the Publishers. 'The American Naturalist,' vol. x., nos. 3 and 4; by the Editor. 'L'Abeille,' nos. 170 and 171; by the Editor. 'Bulletin de la Société Impériale des Naturalistes de Moscou,' 1875, no. 3; by the Society. 'Deutsche Entomologische Zeitschrift,' 1875, Heft. ii., and 1876, Heft. i.; by the Society. 'A Series of Papers on Tenthredinidæ and other Hymenoptera, extracted from the Proceedings of the Natural History Society of Glasgow;' by the Author, Peter Cameron, jun. 'Stettiner Entomologische Zeitung,' 1876, 1—6; by the Berlin Society.

By purchase:—'Entomologischer Kalender für Deutschland, Oesterreich und die Schweiz auf das Jahr 1876.' 'Opuscula Entomologica edidit C. G. Thomson,' fasciculus septimus.

*Election of a Member.*

M. Jules Lichtenstein, of Montpellier, was balloted for and elected a Foreign Member.

*Exhibitions, &c.*

The Rev. J. Hellins sent for exhibition various British Lepidoptera recently submitted to M. Guenée for his opinion and determination. The collection included a dark variety of Acronycta myricæ from Mr. Birchall; certain Acidaliæ, sent by Mr. Hellins and Mr. G. F. Mathew, apparently to be referred to A. mancuniata; several extraordinary aberrations referred to Melanippe rivata, Oporabia, sp.?, Coremia ferrugata, &c., from Mr. Dale and Mr. Mathew; an example of Polia Chi, *var.* olivacea, from Major Hutchinson; several Eupitheciæ, from Dr. Buchanan White, including the *var.* oxydata of E. subfulvata; and an insect which Dr. White proposed to name septentrionata, not known to M. Guenée. The most important of all was a Noctua bearing some resemblance to Xanthia circellaris (ferruginea), not known to M. Guenée, taken at Queenstown, flying over bramble-blossoms, in July or August, 1872, by Mr. Mathew. Concerning this insect it was

remarked that it had been shown to Dr. Staudinger (now in London) by M. Guenée, and it was also unknown to him as European.

Mr. Distant exhibited a series of six examples of the butterfly Ithomia Tutia, *Hewitson*, from Costa Rica. These had been selected to show the very considerable variation in markings to which the species is evidently liable.

Mr. Distant also communicated the following remarks on

*The Rhopalocera of Costa Rica.*

"In the 'Proceedings of the Zoological Society' for the year 1874, Messrs. Butler and Druce published a paper on the 'Butterflies of Costa Rica,' from a collection brought to this country by Dr. Van Patten. Besides other Lepidoptera from Costa Rica, I have lately become possessed of the remainder of a collection made in the same locality by Mr. Gabb, and find the following species not included in the list of Messrs. Butler and Druce. That Catalogue contained the names of 434 species, and it is therefore very desirable in the interest of the study of geographical distribution that a list so large and useful should be made as complete as possible. I also find several distinct forms, of which I either possess or have seen both sexes and series from Costa Rica: these I have described. The forty species by which I have thus supplemented the Catalogue of Messrs. Butler and Druce should together give a moderately complete analysis of the butterfly fauna of Costa Rica, though probably more species of the family Hesperidæ may yet have to be added.

"As the value of these faunistic catalogues is principally in the study of geographical distribution (a subject which I have for some time been investigating), and their completeness is an essential necessity, I should be glad to have this opportunity of asking entomologists who frame such lists not to only give the species contained in one collection, but to include everything previously recorded from the same locality. Specific differences usually considered slight become factors of exceeding interest when dealing with the problems of distribution and dispersion, and I feel confident it will be chiefly by the records of these modifications (when constant) that we shall ultimately arrive at a knowledge of the laws of geographical distribution.

"I have strictly followed the arrangement of Messrs. Butler and Druce in their paper.

Family Nymphalidæ (*Westwood*), *Bates*.—Subfamily Danainæ, *Bates*.

Genus Danais, *Latreille*.

Danais strigosa. D. strigosa, *Bates, Ent. Mo. Mag.*, i., p. 32, no. 11 (1864).

This species seems very abundant at Costa Rica.

Genus Ituna, *Doubleday*.

Ituna albescens, *n. sp.*

Front wings pale ochreous, transparent, with the following dark fuscous opaque markings:—A wide streak occupies one-half of the interno-median interspace. A somewhat broad band extends from costa through middle of cell, along first median nervule, to outer margin; a second band of about the same width commences on subcostal nervure and crosses end of cell along second median nervule to outer margin. These two bands coalesce on the median nervure. A somewhat obscure and interrupted band crosses wing between apex and end of cell. The costal and outer margins are of the same colour, broadest at the apex and least at the costa between the first and second bands. Inner margin rufous. Hind wings ochreous, transparent, a dark fuscous opaque costal margin extending along second subcostal nervule to outer margin, which is broadly of the same colour. Under sides as above; the dark fuscous is of a bright chocolate colour; a few white spots at apex of front wing, and a marginal row of same coloured spots to hind wings. Exp. 4 in. 2 lin.

Dr. Staudinger has kindly examined this species, and says it is quite distinct from a similar form he has lately described from Pebas, and which was a true Eutresis.

Section Heliconoid Danainæ, *B. & D.*

Genus Hymenitis, *Hübner*.

Hymenitis Sosunga. Ith. Sosunga, *Reak., Proc. Ent. Soc. Phil.*, v., p. 217 (1865).

Hymenitis Andromica. Ith. Andromica, *Hewitson, Ex. Butt.*, i. Ith. t. 7, f. 38 (1854).

Genus Mechanitis, *Fabricius*.

Mechanitis Lycidice. M. Lycidice, *Bates, Ent. Mo. Mag.*, i., p. 33, no. 15 (1864).

Mechanitis Utenaia. M. Utenaia, *Reak., Proc. Ac. Nat. Sc. Phil.* (1866), p. 241, no. 9.

Mechanitis ovata, *n. sp.*

Size and general appearance of *M. Lycidice*, Bates, from which it principally differs by the less elongate and more rounded form of the wings, the greater narrowness of the three yellow belts, and in the hind wings by the only rudimentary and obscure appearance of the black discal stripe, and the total absence of the yellow streak on the disk. The general colour is also somewhat brighter and more pronounced.

Mechanitis Labotas, *n. sp.*

Allied to *M. Doryssus*, Bates, from which it differs by the lighter ochreous-yellow colour of the basal part of the front wings, the smaller size of the black spots in cell and between first and second median nervules, and in the greater width of the yellow belts across the apical black region. The lower wings have but the faintest rudimentary trace of the black discal stripe, which is always so well pronounced in *M. Doryssus*. The ground colour is of the same ochreous-yellow as in the upper wings. Exp. 3 in. 2 lin.

Genus Melinæa, *Hübner.*

Melinæa imitata. M. imitata, *Bates, Ent. Mo. Mag.*, i., p. 55, no. 22 (1864).

Subfamily Satyrinæ, *Bates.*
Genus Taygetis, *Hübner.*

Taygetis Celia. Pap. Celia, *Cramer, Pap. Ex.*, iii., t. 242 c (1782).
Taygetis Virgilia. Pap. Virgilia, *Cramer, Pap. Ex.*, i., t. 96 c (1779).
Taygetis Andromeda. Pap. Andromeda, *Cram., Pap. Ex.*, i., t. 96 a (1779).

Genus Euptychia, *Hübner.*

Euptychia Calpurnia, *var.* Neon. Calpurnia, *Feld., Reise Nov. Lep.*, ii., p. 484, no. 836 (1867). The type was from Cayenne.

Euptychia Butleri, *n. sp.*

*Above.*—Front wings white, very broadly fuscous on costal and outer margins. Hind wings white, fuscous at base, and a somewhat broad fuscous band at apical angle, narrowing and terminating about middle of outer margin; fringe fuscous; two submarginal lines, inner one waved. The ocelli on under side seen indistinctly on upper surface, especially the lower one, which shows a small black centre. *Under side.*—Resembles *E. albofasciata*, Hew., but differs in the narrower and redder central lines, and more especially in the size, shape and number of the ocelli, of which there are three at apex of front wing, the uppermost brightest, with yellow iris and silver centre. A submarginal row of five ocelli to lower wing, of which the second and third are obscure and bi-pupilled, the first largest and bi-pupilled, and the fifth near costa smallest. The two submarginal lines are broadly ferruginous at anal angle. Exp. 1 in. 6 lin.

It can easily be distinguished from all varieties of *Euptychia ocirrhoë*, Fab., by the position of the largest ocellus, which is always the first one in *E. Butleri*.

Euptychia Myncea. Pap. Myncea, *Cram. Pap. Ex.* iv., t. 293 c (1782).
Euptychia Labe. E. Labe, *Butler, Ent. Mo. Mag.* vi. p. 250, no. 2, t. 1, f. 2 (1870).

Euptychia Maimoune. E. Maimoune, *Butler, Ent. Mo. Mag.* vi. p. 251, no. 4, t. 1, f. 4 (1870). The type was from Pebas.

Euptychia Oreba. E. Oreba, *Butler, Cist. Ent.* p. 19, no. 1 (1870); *Ent. Mo. Mag.* vi. p. 252, no. 7, t. 1, f. 7 (1870).

Euptychia Gigas. E. Gigas, *Butler, Proc. Zool. Soc.* p. 486, no. 82, t. 40, f. 7 (1866). This differs from the Mexican type in its smaller size and smaller ocelli.

Euptychia Libyoidea. E. Libyoidea, *Butler, Proc. Zool. Soc.* p. 487, no. 84 (1866); t. 11, f. 13 (1867).

Genus Oxeoschistus, *Butler.*

Oxeoschistus Tauropolis. Pron. Tauropolis, *Doub., Hew., Gen. D. Lep.* t. 66, f. 1 (1851).

Genus Opsiphanes, *Westwood.*

Opsiphanes Glycerie. Pap. Glycerie, *Fabricius, Mant. Ins.* ii. p. 36, no. 379 (1787).

Genus Apatura, *Fabricius.*

Apatura Clothilda. A. Clothilda, *Feld. Reise Nov. Lep.* iii. p. 437, no. 707, t. 57, f. 4, 5 (1867).

Genus Junonia, *Hübner.*

Junonia Genovera. Pap. Genovera, *Cram. Pap. Ex.* iv., t. 290 f f (1782).

Genus Pyrameis, *Hübner.*

Pyrameis Huntera. Pap. Huntera, *Fabr. Syst. Ent.* p. 499, no. 240 (1775).

Genus Myscelia, *Doub.*

Myscelia Leucocyana. M. Leucocyana, *Feld. Wien. Ent. Mon.* v. p. 106, no. 87 (1861).

Genus Phyciodes, *Hübner.*

Phyciodes Thymetus. Pap. Thymetus, *Fabricius, Mant. Ins.* ii., p. 30, no. 320 (1787).

Phyciodes Lelex. Mel. Lelex, *Bates, Ent. Mo. Mag.* i., p. 81, no. 35 (1864).

Genus Dione.

Dione Poeyi. D. Poeyi, *Butler.*

Subfamily Heliconinæ, *Bates.*

Genus Heliconius, *Fabr.*

Heliconius Sara. Pap. Sara, *Fabr. Ent. Syst.* iii. 1, p. 167, no. 518 (1793).

Heliconius Demophoon. H. Demophoon, *Mén. Cat. Mus. Petr. Lep.* i. p. 86, t. 2, f. 4 (1855).

Heliconius Amaryllis. H. Amaryllis, *Felder, Wien. Ent. Mon.* vi. p. 80, no. 68 (1862).

Subfamily Acræinæ, *Bates.*
Genus Actinote, *Hübner.*

Actinote Anteas. A. Anteas, *Doub., Hew., Gen. D. L.*, t. 18, f. 5 (1848).

Family Papilionidæ.—Subfamily Pierinæ, *Bates.*
Genus Euterpe, *Swainson.*

Euterpe approximata? E. approximata, *Butler.*

Genus Meganostoma, *Reakirs.*

Meganostoma Cerbera? Col. Cerbera, *Felder, Wien. Ent. Mon.* v. p. 83, no. 38 (1861).

Genus Pieris, *Boisduval.*

Pieris Kicaha. P. Kicaha, *Reak., Proc. Ent. Soc. Phil.*, ii., p. 349, no. 9 (1863).

Genus Dismorphia, *Hübner.*

Dismorphia Praxinoe. Lep. Praxinoe, *Doub., Ann. Nat. Hist.*, xiv., p. 419 (1844).

Subfamily Papilioninæ, *Bates.*
Genus Papilio, *Linn.*

Papilio Sesostris. P. Sesostris, *Cram., Pap. Ex.*, iii., t. 211 F G (1782).
Papilio Lycidas. P. Lycidas, *Cram., Pap. Ex.*, ii., t. 113 A (1779).

Family Hesperidæ, *Leach.*
Genus Eudamus, *Swains.*

Eudamus Neis. Cecrops Neis, *Hübner, Zutr. Ex. Schmett.*, f. 619, 620 (1832)."

Mr. Douglas exhibited specimens of the Corozo nut (*Phytelephas macrocarpa*), the vegetable ivory of commerce, of which the interiors were entirely eaten away by a species of Caryoborus (one of the Bruchides). A specimen of the beetle was shown with nuts, from the London Docks, which had been recently imported from Guyaquil.

The Secretary read a letter he had received from the Foreign Office Department, enclosing a despatch from Her Majesty's Minister at Madrid relative to the steps taken to check the ravages of the locust in Spain. It appeared that considerable apprehension had been felt in many parts of Spain that the crops of various kinds would suffer greatly this year from the locust; and the Cortes had already voted a large sum to enable the Government to take measures to prevent this calamity, and by a circular addressed

to the Provincial Governors by the Minister of 'Fomento,' published in the Official Gazette, they were directed to make use of the military forces stationed within their respective districts, to aid the rural population in this object. It was stated that thirteen provinces were threatened with this plague.

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June 7, 1876.

Prof. J. O. Westwood, M.A., F.L.S., &c., President, in the chair.

*Additions to the Library.*

The following donations were announced, and thanks voted to the donors:—'Proceedings of the Royal Society,' nos. 168 and 169; by the Society. 'Journal of the Linnean Society (Zoology),' no. 63; by the Society. 'The Naturalist: Journal of the West Riding Consolidated Naturalists' Society,' no. xi.; by the Society. 'The Zoologist' for June; by the Editor. 'Newman's Entomologist' for June; by the Editor. 'The Entomologists' Monthly Magazine' for June; by the Editors. 'Nature,' nos. 340 to 344; by the Editor. 'Conspectus of the Species of Paratelphusa, an Indo-Malayan Genus of Fresh-water Crabs;' by the Author, J. Wood-Mason, Esq. 'The Geographical Distribution of Animals,' 2 vols.; by the Author, A. R. Wallace, Esq. 'The Canadian Entomologist,' vol. viii., nos. 2, 3 and 4; by the Editor. 'The American Naturalist,' vol. x., no. 5; by the Editor. 'New and Interesting Insects from the Carboniferous of Cape Breton;' by the Author, Samuel H. Scudder, Esq., of Cambridge, Mass. 'L'Abeille,' nos. 172 and 173; by the Editor, M. de Marseul. 'Von der Challenger-Expedition,' Briefe von R. v. Willemoes-Suhm an C. Th. v. Siebold (vii.); by Prof. v. Siebold. 'Bulletino della Società Entomologica Italiana,' 1876, trimestre 1; by the Society. 'Bulletin de la Société Impériale des Naturalistes de Moscou,' 1875, no. 4; by the Society. 'Note sur une Sécrétion propre aux Coléoptères Dytiscides,' par Felix Plateau; by the Author. 'Notes pour servir à l'histoire des Insectes du Genre Phylloxera, par J. Lichtenstein (de Montpellier), Extrait des Annales Agronomiques, tom. ii., no. 1; presented by the Author. Mémoires de l'Academie Royale des Sciences, des Lettres et des Beaux-Arts de Belgique, 4to, tome xli., 1e and 2e parties; 'Mémoires Couronnés et Memoires des Savants Etrangers, 4to, tome xxviii. and tome xxxix., 1e partie; ditto (collection in 8vo), tomes xxiv., xxv. and xxvi.; 'Bulletino de l'Academie Royale de Belgique,' 2nd Série, tomes xxxvii. to xl.; 'Annuaire de l'Academie Royale de Belgique,' 1875 and 1876. 'Notices Biographiques et Bibliographiques,' concernant les Membres et les Correspondants, ainsi que les Associés résidents 1874; by the Academie Royale de Belgique.

'Reise der Osterreichischen Fregatte Novara um die Erde in den Jahren,' 1857, 1858, 1859—Zoologischer Theil, Zweiter Band, Zweite Abtheilung—Lepidoptera Rhopalocera, von Dr. Cajetan Felder und Rudolf Felder, heft 1—3; presented by Nathaniel C. Tucly, Esq.

By purchase:—'The Zoological Record' for 1874.

*Election of Members.*

Messrs. Alexander Augustus Berens, A. H. Swinton, and Charles Marcus Wakefield, were balloted for and elected Ordinary Members.

*Exhibitions, &c.*

Mr. Douglas made some further remarks on the "Corozo nuts," known as vegetable ivory, exhibited by him at the last meeting, which were attacked by a beetle belonging to the genus Caryoborus. The attention of the officials of the Dock Company had been drawn to the serious loss of weight that would be found when the nuts were to be delivered, and they were anxious to ascertain if there was any mode of arresting their depredations, and whether the beetles lived and bred among dried nuts, or entered the kernel in an earlier stage. It was suggested that the mischief originated in the parent beetles laying their eggs in the nuts when still in a green or soft state, and as there were several larvæ in each nut the interior was completely destroyed. The metamorphosis took place inside the nut.

Mr. M'Lachlan, in connexion with the above, exhibited another species of palm (*Copernicia cōnifera*), from Rio Janeiro, forwarded to him by Professor Dyer, which were also infested with a species of Caryoborus (*C. bactris*, Linn.). In this case each nut served as food for a single larva only, which bored in it a cylindrical hole of considerable size and depth.

Mr. E. A. Fitch exhibited the seeds of a leguminous plant (an article of commerce) imported from Egypt, infested by a Bruchus, which was estimated to cause a loss of 50 per cent. to the owners.

The President exhibited the larva of an Australian species of Hepialus (he believed from Queensland), bearing a fungus with four or five different branches, issuing from the back of the neck and the tail. Also, a fungus growing from the back of a Noctua pupa.

Mr. Fryer exhibited a curious variety of one of the Geometridæ, believed to be Melanippe rivata.

Mr. M'Lachlan, on behalf of Dr. Atherston, of South Africa, exhibited a pair of a very singular Orthopterous insect (belonging to the Acrydiidæ), which, in colour and in the granulated texture, so exactly mimicked the sand of the district as to render it almost impossible to detect it when in a quiescent state. The name of the insect was uncertain, but it was supposed to approach the Trachyptera scutellaris, *Walker*. Also some singular oval, flattened cases, open at each end, and from six to eight lines in length,

formed of silk, to which was externally fixed a quantity of fine light brown sand. The cases were found under stones in sandy districts, and were stated by Mr. Charles O. Waterhouse to belong to a beetle of the genus Paralichas (one of the Dascillidæ). Also the cases of a species of Oiketicus, of peculiar structure; the inner lining of the tube was, as usual, composed of toughened silk, but to this was attached, externally, a quantity of fine sand, and outside this a number of small angular pebbles, only the tail-end bearing a few rather long twigs and species of grass stems: thus the cases differed from those of most species in which substances exclusively vegetable were attached externally, the addition of the pebbles making the cases (which were nearly two inches in length) unusually heavy.

The President read descriptions and exhibited drawings of two very singular forms of Coleopterous insects from Mr. A. R. Wallace's private collection. For the first, which belonged to the family Telephoridæ, he proposed the generic term Astychina, remarkable for the form of the two terminal joints of the antennæ, which were modified in one sex into what appeared to be a prehensile apparatus, different from anything in the insect world, but of which some analogous forms were found to occur in certain Entomostracous Crustacea. The other belonged to the family Cleridæ, and was named Anisophyllus, differing from all known beetles by the extremely elongated branch of the ninth joint of the antennæ.

Mr. Smith read descriptions of new species of Hymenopterous insects from New Zealand, collected by Mr. Charles M. Wakefield. The number of known Hymenoptera from New Zealand appeared to be about forty-eight.

*Papers read.*

Mr. J. S. Baly communicated descriptions of new genera and species of Halticinæ.

Dr. Sharp communicated descriptions of a new genus and some new species of Staphylinidæ, from Mexico and Central America, collected by Mr. Salvin, Mr. Flohr, and Mr. Belt.

*New Part of 'Transactions.'*

Part 1 of the 'Transactions' for 1876 was on the table.

July 5, 1876.

Professor Westwood, M.A., President, in the chair.

*Additions to the Library.*

The following donations were announced, and thanks voted to the donors:—'Proceedings of the Scientific Meetings of the Zoological Society of London for the year 1876,' part 1; by the Society. 'The Zoologist' for July; 'Newman's Entomologist' for July; by the Representatives of the late Edward Newman. 'The Entomologist's Monthly Magazine' for July; by the Editors. 'The Naturalist: Journal of the West Riding Consolidated Naturalists' Society,' no. xii., for July; by the Editors. 'Journal of the Quekett Microscopical Club,' no. 31 (May); by the Club. 'Nature,' nos. 345 to 348; by the Publishers. 'Exotic Butterflies,' part 99; by the Author, W. C. Hewitson, Esq. 'Proceedings of the Linnean Society of New South Wales,' vol. i., part i.; by the Society. 'Annual Report of the Entomological Society of Ontario for the year 1875;' by the Society. 'The Canadian Entomologist,' vol. viii., no. 5; by the Editor. 'L'Abeille,' nos. 174 to 176; by the Editor, M. de Marseul. 'Tijdschrift voor Entomologie,' 1875-76, 1e & 2e Aflevering; by the Editors. 'Verhandlungen des Vereins für Naturwissenschaftliche Unterhaltung zu Hamburg, 1875,' band ii.; by the Editor. 'Eighth Annual Report on the Noxious, Beneficial and other Insects of the State of Missouri; by the Author, Charles V. Riley. 'The American Naturalist,' vol. viii., parts 2 to 12, and vol. ix.; by the Editor. 'The Sixth Annual Report of the Trustees of the Peabody Academy of Science for the year 1873;' by the Academy. 'The Invertebrate Cave Fauna of Kentucky and adjoining States;' 'On the Development of the Nervous System in Limulus;' 'Descriptions of new North-American Phalænidæ and Phyllopoda;' 'On the Transformations of the Common House-fly;' 'Explorations of the Gulf of Maine with the Dredge;' 'On the Distribution and Primitive Number of Spiracles in Insects;' 'New Phyllopod Crustaceans;' 'On Gynandromorphism in the Lepidoptera;' by the Author, A. S. Packard, jun. 'Reports on the Zoological Collection of Lieut. W. L. Carpenter, made in Colorado during the Summer of 1873;' by the Author.

By purchase:—'Fauna del Regno di Napoli.' By Achille Costa. *Coleotteri*, 2 parts; *Lepidotteri*, 2 parts; *Ortotteri, Neurotteri & Emitteri*, 1 part; *Imenotteri*, 2 parts.

*Exhibitions, &c.*

Mr. Douglas exhibited the following Psyllidæ, taken by himself near Lee, Kent, *viz.*:—

*Psylla* ———? On birch trees. Possibly P. Betulæ, *Linn.*, *Flor.*

„ *spartiophila*, Först. On broom bushes.

*Aphalara venosa*, Först. New to the British Fauna; now first identified as living on Achillea millefolium.

*Rhinocola aceris*, Linn. On maple trees (*Acer campestris*).

„ *ericæ*, Curtis. On heather.

The President showed some microscopic slides containing specimens of Diptera, &c., prepared with extraordinary care by Mr. Enock. He also brought for exhibition twigs of horse-chestnut from Oxford, that had been attacked by some kind of larva, which had eaten away the inside of portions of the stem, causing the buds to drop off. He was in doubt whether the mischief had been caused by Zeuzera Æsculi, or by Tortricidæ, or wood-boring beetles, but he would be glad to know if the destruction to the trees had been noticed elsewhere. He also exhibited two species of Coccus, one of them on Camellia leaves in his greenhouse, which he had previously described in the 'Gardener's Chronicle,' under the name of C. Camelliæ, and which had afterwards been observed by Dr. Verloren in his greenhouse in Holland. The female, which is one line in length, discharges a white waxy matter, having the appearance of the excrement of a young bird. The other species had been sent to him by the Rev. T. A. Preston, of Marlborough, on a species of Euphorbia, obtained from Dr. Hooker, of Kew. The leaves were covered with small scales, which, on close examination, were observed to have two small spines attached, and these proved to be the caudal extremities of the males. These insects emerge from the pupa backwards, and in consequence they make their appearance with the wings drawn forwards over the head.

Mr. Stevens exhibited varieties of some British Geometræ, and what appeared to be a small variety of Lycæna Thetis (Adonis), taken near Croydon.

*Papers read.*

Mr. Baly communicated "Descriptions of a new Genus and of new Species of Halticinæ."

Mr. Peter Cameron communicated "Descriptions of new Genera and Species of Tenthredinidæ and Siricidæ, chiefly from the East Indies, in the Collection of the British Museum."

*New Part of 'Transactions.'*

Part 2 of the 'Transactions' for 1876 was on the table.

August 2, 1876.

Sir Sidney Smith Saunders, C.M.G., Vice-President, in the chair.

*Additions to the Library.*

The following donations were announced, and thanks voted to the donors:—'Proceedings of the Royal Society,' nos. 170 and 171; presented by the Society. 'Transactions of the Linnean Society of London,' General Index, vols. xxvi.—xxx., completing the First Series; and vol. i., part 3, Zoology; by the Society. 'The Zoologist' and 'Newman's Entomologist' for August; by the Representatives of the late Edward Newman. 'The Entomologist's Monthly Magazine' for August; by the Editors. 'Nature,' nos. 349 to 352; by the Publishers. 'The Naturalist: Journal of the West-Riding Consolidated Naturalists' Society,' no. xiii.; by the Society. 'The Canadian Entomologist,' vol. viii., no. 6; by the Editor. 'L'Abeille' (Cryptocephales, pp. 205—236); by the Editor. 'Bulletin of the Buffalo Society of Natural Sciences,' vol. iii., no. 2; by the Society. 'Check-List of the Noctuidæ of America, North of Mexico,' i., Bombycinæ and Noctuelitæ (Nonfasciatæ); by the Author, A. R. Grote. 'Proceedings of the Boston Society of Natural History,' vol. xvii., parts 3 and 4; vol. xviii., parts 1 and 2; by the Society. 'Appalachia: the Proceedings of the Appalachian Mountain Club,' vol. i., no. 1; by the Club. 'Fossil Orthoptera from the Rocky Mountain Tertiaries,' by Samuel H. Scudder; 'Fossil Coleoptera from the Rocky Mountain Tertiaries,' by Samuel H. Scudder; 'On the Carboniferous Myriapods preserved in the Sigillarian Stumps of Nova Scotia,' by Samuel H. Scudder: by the Author. 'Memoirs of the Boston Society of Natural History,' vol. ii., part 4, nos. 2, 3 and 4: by the Society. 'Memoirs of the Peabody Academy of Science,' vol. i., no. 4: by the Academy. 'Memoirs of the American Association for the Advancement of Science;' by the Association. 'The American Naturalist,' vol. x., no. 6; by the Editor. 'Notes and Descriptions of North-American Coleoptera,' by John L. Leconte, M.D.; 'Catalogue of the Coleoptera of Mount Washington, N. H.,' by E. P. Austin, with Descriptions of New Species by John L. Leconte, M.D.: 'Address of Ex-President, Dr. John L. Leconte, before the American Association for the Advancement of Science at Detroit, Michigan, August 13, 1875; by the Author. 'Notes and Descriptions of North-American Coleoptera,' by George H. Horn, M.D.; by the Author.

By purchase:—'Genera des Coléoptères,' par M. Lacordaire & M. Chapuis, vols. ix. to xii., and plates 81 to 134, completing the work.

'Bericht über die wissenschaftlichen Leistungen im Gebiete der Entomologie,' 1871 and 1872.

*Election of Members.*

Mr. Harold Swale, of St. George's Road, Pimlico, and Mr. Thomas Stanton Hillman were balloted for and elected Ordinary Members.

*Exhibitions, &c.*

Mr. Stevens exhibited specimens of Tillus unifasciatus and Xylotrogus brunneus, taken on an oak fence at Upper Norwood. These insects did not appear to have been taken near London for many years.

Mr. Forbes exhibited a specimen of Quedius dilatatus (a parasite in hornets' nests), taken by him at sugar in the New Forest.

Mr. Champion exhibited Harpalus 4-punctatus, Dendrophagus crenatus, Leptura sanguinolenta (female), Amara alpina (female), Cryptophagus parallelus and Omosita depressa, all taken at Aviemore, in Inverness-shire.

A letter was read from T. V. Lister, Esq., of the Foreign Office, transmitting, for the information of the Entomological Society, a copy of a despatch from Sir John Walsham, Her Majesty's Chargé d'Affaires at Madrid, relative to the plague of locusts, together with a box containing specimens of the insect, and a number of earthen egg-cases, each containing from thirty to forty eggs. The despatch stated that the Official Report showing the progress of the plague and the steps taken to exterminate the insect had not yet been published, but a copy would be sent to the Society in a few weeks. It was said that the damage done by the locusts this year was considerably less than that of last year, owing to the number of soldiers which the Government had been enabled to employ since the war was over to assist the inhabitants of the districts where the plague existed in destroying the insects. The insects sent were stated to be specimens of Locusta migratoria, but on examination they were ascertained to be the Locusta albifrons, *Fab.* (Decticus albifrons, *Savigny*).

Mr. M'Lachlan exhibited a series of thirteen examples of a dragonfly (Diplax meridionalis, *Selys*), recently taken by him in the Alps of Dauphiné, between Grenoble and Briançon (the exact locality being near the village of La Grave, at the base of the 'Aiguille du Midi'), remarkable for the extent to which nearly all were infested by the red parasite described by De Geer as Acarus libellulæ (perhaps a species of Trombidium). Of the thirteen examples captured casually only one was free from parasites, the number of them on the others being respectively 7, 8, 9, 15, 17, 19, 28, 47, 51, 73, 96 and 111, or a total of 481 on twelve individuals. They were firmly fixed on the nervures towards and at the base of the wing, almost

invariably on the under side; but whatever might be the number on any particular dragonfly it was always divided nearly symmetrically on the two sides of the insect—those much infested having a very pretty appearance, from the wings looking as if spotted with blood-red. He had no doubt that the Acari must have attained their position by climbing up the legs of the dragonfly when at rest; probably they did not quit it till the dragonfly died, or perhaps they died with it, so firmly were they fixed. He remarked that the history of the Acari was involved in much obscurity, for it appeared by no means certain that all those existing could ever gain access to dragonflies; just as in the case of the bed-bug and the human-flea, where there must be myriads that never have an opportunity of tasting human blood. He further noticed that, at the meeting of this Society on the 1st of August, 1864, he exhibited a dragonfly from Montpellier similarly attacked, and it was recorded as Diplax striolata (Tr. Ent. Soc., 2nd series, vol. ii., Proc. xxxvi.). This was an error, the insect being D. meridionalis, which seemed to be particularly subject to attack.

Mr. F. Smith read the following:—

*Note on Nematus gallicola*, Steph.

"This is one of the commonest species of sawfly found in Europe; it is the maker of the well-known red galls so plentiful on leaves of different species of willow. The galls are, as Mr. Cameron observes, in his communication to the 'Scottish Naturalist,' somewhat local, but they are extremely abundant in many situations. I have on many occasions collected large quantities of leaves, more or less covered with galls, and have bred many hundreds of the flies—all proving on examination to be females. Mr. Cameron observes, in the paper alluded to, 'The male is quite unknown to me, and this appears to have been also the case with Hartig.' Last spring I collected, in the London district, a quantity of the galls, placing them in a large flower-pot half-filled with garden mould. The larvæ soon quitted the galls and buried themselves in the mould for the purpose of undergoing their transformations. About a month after this the flies began to issue forth, probably to the number of from five to six hundred: among this number I had the satisfaction of finding two males. This sex closely resembles the female, but has a narrower body, longer antennæ, and the tip of the abdomen is pale; the abdomen is also narrower, and not, as in the female, widened towards the apex. This season I have repeated my experiment, and have obtained a single male out of several hundreds of flies.

"Mr. Cameron further observes, 'In all probability they, like Cynips (lignicola) Kollari and other Cynipidæ, propagate without the aid of the male sex.' This observation was undoubtedly made in ignorance of the discovery made by Mr. Walsh in 1868. In the 'American Naturalist' for

that year, the author records the fact of having himself bred both sexes of Cynips spongifica from the galls of the black oak of North America. These galls resemble those of Cynips Kollari, being globular, rather larger than the European galls, but of the same hard woody consistency externally, and of the same spongy substance inside. Mr. Walsh adds, 'By the fore-part or middle of June both male and female gall-flies eat their way out of a certain number, say about one-fourth part; the remainder are not developed until about two months later.' In a private communication from Mr. Walsh, I learnt that he had, like myself, bred hundreds of the gall-flies from galls collected late in the autumn, all these proving to be females, and that it was not until he made collections of galls in summer, when a partial development of flies takes place, that he obtained the male, this sex being as one to many hundreds of females. At length he bred three males, one of which he kindly forwarded to me, and which I exhibited at a meeting of this Society. Following up Mr. Walsh's method of collecting the galls of Cynips Kollari early in the season,—that is, just at the time when they are becoming hardened, and before any flies have escaped from the fresh galls,—I have tried, but hitherto without success, to obtain males of Cynips; but I advise all who are interested in the matter to pursue the same plan, always remembering that these mysteries of nature are only unfolded at intervals, and then only to favoured votaries.

"With respect to the obtaining of males of Nematus gallicola, I believe that any one may collect, even early in the season, thousands of the galls of that insect without obtaining a male; but in all probability, by persevering season after season, his efforts will, as in my own case, be crowned with success; but I feel assured that unless the galls are gathered before any of the flies have escaped, he will have little or probably no chance of success. The same care must also be taken in collecting the galls of Cynips Kollari; collecting them early, just at the time when they harden and become woody, for it is out of the flies first developed that the male may be expected to be found. My having bred thousands upon thousands of flies without obtaining a male should prove a stimulus to others, for that a male exists I think Mr. Walsh has determined beyond question. The impregnation of a single female may possibly be sufficient to render her progeny, and their descendants, for several generations, equally fertile; and the same may possibly be the history of Nematus gallicola. The male bred by Mr. Walsh is said not to belong to the restricted genus Cynips, but to one not represented in Europe. This may be the case; but in all essential generic characters it agrees in a remarkable manner: 'spongifica,' like Cynips proper, has thirteen-jointed antennæ; the neuration of the wings is the same, and no difference is perceptible in the construction of the legs; the differences that are perceptible are in its abdomen being less compressed, and it is glabrous; there may be some other minor differences;

the form of the thorax is apparently the same as that of Cynips. The question, 'Has Cynips a male?' remains, in the opinion of those who have attentively studied the group, unanswered; but surely more differences must exist between 'spongilica' and the members of the restricted genus Cynips than a less compressed abdomen, and the absence of the downy pile that is observable on the sides of the abdomen of Cynips Kollari and its allies."

A discussion ensued, in which Messrs. Dunning, M'Lachlan, E. A. Fitch and others took part, it appearing to some of the Members that there was still a considerable amount of uncertainty as to the precise generic rank of the presumed male Cynips.

*Papers read.*

The President, who was unable to be at the Meeting, forwarded a paper entitled, "Notes on the Habits of a Lepidopterous Insect, parasitic on Fulgora candelaria, by J. C. Bowring, with a Description of the Species, by J. O. Westwood," accompanied by drawings of the insect in its various stages. This curious insect, resembling a Coccus, had been brought to this country twenty-six years ago by Mr. Bowring, and on his return to India he had succeeded in rearing it to its perfect state, proving it to be the larva of a Lepidopterous insect, the general appearance of which induced the Professor to place it among the Arctiidæ. The larvæ were found attached to the dorsal surface of the Fulgora, and as they grew had a cottony covering, which also occurred in the pupa state (a period which appeared to be of very variable duration). The evidence appeared to prove that the larvæ fed on the waxy secretion of the Fulgora, and the cocoon of the pupa was formed of the same substance. Prof. Westwood had previously noticed this extraordinary insect at the meeting of the British Association at Oxford in 1860, under the name of Epipyrops anomala.

The Rev. R. P. Murray forwarded a paper by Mr. W. H. Miskin, of Brisbane, containing "Descriptions of New Species of Australian Diurnal Lepidoptera in his own Collection."

Mr. Edward Saunders communicated the third and concluding portion of his "Synopsis of British Hemiptera-Heteroptera."

September 6, 1876.

J. Jenner Weir, Esq., F.L.S., in the chair.

*Additions to the Library.*

The following donations were announced, and thanks voted to the donors:—'The Zoologist' and 'Newman's Entomologist' for September; presented by the Representatives of the late Edward Newman. 'The Entomologist's Monthly Magazine' for September; by the Editors. 'Nature,' nos. 353 to 357: by the Publishers. 'The Sixth Annual Report of the Leeds Naturalists' Club; by the Club. 'The Naturalist; Journal of the West Riding Consolidated Naturalists' Society and General Field Club;' by the Editors. 'The Canadian Entomologist,' vol. viii., nos. 7 and 8; by the Editor. 'Annales de la Société Linnéenne de Lyon,' 1873 and 1874, tomes 21 and 22; by the Society. 'Sur une nouvelle espèce du Genre d'Ephémérines, Oligoneuria (*O. Rhenana*), par feu le Dr. L. Imhoff, traduit de l'Allemande et annoté par le Dr. Emile Joly;' by M. Joly. 'L'Abeille,' tome xiv., no. 177; by the Editor, M. de Marseul. 'Mittheilungen der Schweizerischen Entomologischen Gesellschaft,' vol. iv., Heft no. 9; by the Swiss Entomological Society. 'Bulletino della Società Entomologica Italiana,' anno ottavo, trimestre ii.; by the Society. 'Bulletin de la Société Impériale des Naturalistes de Moscou,' 1876, no. 1; by the Society. 'The American Naturalist' for July and August, vol. x., nos. 7 and 8; by the Editor. 'Monograph of the Geometrid Moths,' by Dr. A. S. Packard, jun., forming the tenth volume of the United States Geological Survey of the Territories; by Dr. F. V. Hayden, U. S. Geologist. 'Acta de la Academia Nacional de Ciencias Exactas existente en la Universidad de Córdova,' tome 1; by Dr. Burmeister. 'Description Physique de la République Argentine d'après des observations personelles et étrangères, par le Dr. H. Burmeister, traduit de l'allemand par E. Maupas,' tome premier; by Dr. Burmeister.

By purchase:—'Fabricii Systema Piezatorum.' 'Reise der Oesterreichischen Fregatta Novara um die Erde,' Heft iv. (Lepidoptera Heterocera).

*Election of Member.*

Edward Boscher, Esq., of Belle-vue House, Twickenham, was balloted for and elected an Ordinary Member.

*Exhibitions, &c.*

Mr. Edward Saunders exhibited the following rare insects, chiefly from the neighbourhood of Chobham:—

HEMIPTERA.

*Corizus maculatus.*
*Plociomerus luridus.*
*Macrocoleus tanaceti*, male and female (the female only known previously).
*Chlamydalus pygmæus*, Zett. = *Tytthus insignis*, D. & S. From Wimbledon.
*Nabis flavomarginatus* (developed).
„ *Poweri*, E. S.
*Acanthia hirundinis*. From nest of house martin, taken on the window-sill of a house.

HYMENOPTERA.

*Odynerus reniformis*, n. sp.
*Astata stigma*, male (the female only known in Britain previously).
*Ceropales variegata.*
*Ellampus Panzeri.*

Mr. Jenner Weir exhibited a specimen of Lycæna Icarus, which had a hollow horn-like protuberance, fixed in front of the head, exactly between the antennæ. He was disposed to think the adherent object was the *theca* of a moss from which the operculum had fallen off and the spores had escaped. The insect had been taken by the Rev. F. Freeth, Rector of Liss, in the county of Southampton.

Mr. Weir also exhibited specimens of the harvest-bug (*Leptus autumnalis*) in the six-legged larval state, and detailed the excessive irritation they had produced by their attacks on himself. Probably in consequence of the dry summer, they had been unusually numerous; he had counted eighty pustules caused by the Acarus in one of his feet, and as they extended over the front of his body as high as the arms, he calculated he could not have had less than four hundred pustules at one time; they did not attack the back or the arms: he found that sponging the body with vinegar allayed the irritation and prevented the attacks, but the application of the remedy caused the wounds produced to smart very much. He found them most plentiful amongst leguminous plants, as sanfoin, red clover and French beans. He could plainly perceive the pest running rapidly over his boots whenever he went amongst the plants mentioned. The larger specimens were red in colour, but the newly-hatched young were whitish.

Mr. F. Smith remarked that on one occasion when he was in the Isle of Wight he had suffered very much from this annoying pest, and he found

that by taking a dose of "milk of sulphur" he was effectually relieved from all annoyance.

Professor Westwood communicated a note with reference to some shoots of horse-chestnut which he had exhibited at the July meeting of the Society, as having been destroyed, apparently by some Lepidopterous larvæ or wood-boring beetles; but he had since received from Mr. Stainton some shoots that had been forwarded to him by Sir Thomas Moncrieffe, which had been destroyed by squirrels in precisely the same manner. Sir Thomas had himself seen the squirrels at work splitting the shoots with their teeth and extracting the pith.

Mr. Smith remarked that he had found the common buff-tip moth (*Pygæra bucephala*) very destructive of late to the Spanish chestnut, a tree on which the insect is not usually found.

Professor Westwood also stated that he had received from a correspondent in Oxfordshire specimens of the two small species of grasshopper with long antennæ, Meconema varium, *Fab.*, and Xiphidion clypeatum, *Panzer*, which he had taken on a pear tree in his garden, where they had been regularly observed for the last five or six years.

Mr. M'Lachlan stated that the former insect was frequently observed by Lepidopterists when sugaring for moths.

Mr. Smith communicated the descriptions of three additional species of Formicidæ from New Zealand, which had been sent to him by Mr. David Sharp since his description of Mr. Wakefield's collection was in the press. Two of the species belonged to genera not previously ascertained to inhabit New Zealand, namely Amblyopone and Ponera.

Mr. F. Smith exhibited a series of sixty specimens of a sawfly (*Cræsus septentrionalis*), which he had bred from larvæ found feeding on young shoots of the alder, growing on the banks of the Sid, near Sidmouth, South Devon. The specimens of the fly were all bred in a single flower-pot, nine inches in diameter.

Mr. Smith also mentioned the fact of Mutilla Europæa having been found parasitic on Bombus muscorum, by Miss M. Pasley, in an orchard at Shedfield Grange, near Wickham, Hants; he also remarked on a coincidence somewhat remarkable, that on the day previous to his receiving Miss Pasley's communication, Prof. Edward Brandt, of St. Petersburg, had informed him that he had found Mutilla Europæa in a nest of Bombus muscorum; this being the first instance that had come to his knowledge of the parasite infesting the nests of that species of humble-bee.

Dr. Sharp communicated the following list of localities of some species of Amazonian Staphylinidæ discovered by Dr. Trail, and described by Dr. Sharp in the 'Transactions of the Entomological Society of London,' 1876, pp. 27—424:—

Placusa confinis. Lages, near Manaos.

Diestota sperata, Homalota Traili, Gyrophæna parca, G. debilis, G. boops, Coproporus tinctus, Sunius strictus. Berury, on the east bank of the Rio Purus, near its junction with the Solimoes, or Upper Amazon.

Calodera syntheta, Homalota brevis, H. gilva, Gyrophæna parca, G. lævis, G. juncta, G. convexa, G. sparsa, G. quassa, G. tridens, G. boops, G. debilis, Conurus setosus, Ploiopterus lætus, P. Traili. Garrao, on the west (*i. e.* the left side descending) bank of the Rio Juruá, about three hundred miles from its mouth (about 4° S.).

Gyrophæna pumila, G. parvula, Coproporus distans, Xantholinus anticus, Palaminus discretus, Stenus pedator, Bledius similis. Jurucuá, on the east bank (*i. e.* right, descending) of the Rio Purus (about 7° S.).

Coproporus curtus. Parentins or Juruty, on the south bank of the Lower Amazons, about one hundred miles above Obydos.

Coproporus politus, C. ignavus, C. cognatus, Philonthus Traili, Stenus Traili. Ananá, on the north bank of the Solimoes or Upper Amazons, not far above Manacapuru.

Coproporus conformis, Cryptobium triste, Sunius insignis, Stenus excisus, Omalium nanum. Pupunha, on the west bank of the Rio Juruá about 5° S.).

Dolicaon distans, Bledius albidus. Mouth of Lago de Pao, left bank of Rio Juruá (about 3° S.).

Cryptobium Traili, Bledius muticus, B. modestus. West bank of Rio Madeira, above Abelha (about 7° S.).

Pœderus punctiger. Cararaucu, north bank of Lower Amazons, about one hundred miles below Villa Bella (formerly Villa Nova).

Bledius addendus, B. simplex. Rio Solimoes, or Upper Amazons, off the Ilha de Catua, near Teffé (formerly Ega).

*Papers read.*

The following memoirs were read:—

"Notæ Dipterologicæ. No. III. Descriptions of new Genera and Species of Acroceridæ." By J. O. Westwood, M.A., F.L.S., &c.

"Notæ Dipterologicæ. No. IV. Monograph of the Genus Systropus, with Notes on the Economy of a new Species of that Genus." By J. O. Westwood, M.A., F.L.S., &c., President of the Entomological Society.

October 4, 1876.

Sir Sidney Smith Saunders, C.M.G., Vice-President, in the chair.

*Additions to the Library.*

The following donations were announced, and thanks voted to the donors:—'Proceedings of the Royal Society,' no. 172; presented by the Society. 'Journal of the Linnean Society (Zoology),' nos. 64 and 65; by the Society. 'Journal of the Quekett Microscopical Club,' no. 32; by the Club. 'The Zoologist' and 'Newman's Entomologist' for October; by the Representatives of the late Edward Newman. 'The Entomologist's Monthly Magazine' for October; by the Editors. 'Nature,' nos. 358—361; by the Publishers. 'The Naturalist: Journal of the West Riding Consolidated Naturalists' Society,' no. xv.; by the Editor. 'A Monograph of the British Species of Phænusa;' by the Author, Peter Cameron, Esq. 'Description of a new Species of Phasmidæ;' 'Description of a new Species of Cetoniidæ;' 'On the Femoral Brushes of the Mantidæ and their Function (Abstract);' by the Author, J. Wood-Mason, Esq. 'Proceedings of the Linnean Society of New South Wales,' vol. i., part 2; by the Society. 'L'Abeille,' no. 170; by the Editor. 'Annales de la Société Entomologique, de Belgique,' tome xix., fasc. 1; by the Society. 'Le Helicopsyche in Italia; Lettera agli Entomologi Italiani;' by the Author, Carl von Siebold. 'Stettiner Entomologische Zeitung,' 37 jahrgang; by the Society. 'Transactions of the American Entomological Society,' vol. iii.; by the Society.

By purchase:—'Ueber neue indische Chernetiden,' von Ant. Stecker. 'Ueber bläschenförmige Sinnesorgane und eine eigenthümliche Herzbildung der Larve von Ptychoptera contaminata, *L.*,' von Carl Grobben.

*Election of a Member.*

Mons. Alfred Preudhomme de Borre, of Brussels, Secretary of the Belgian Entomological Society, was balloted for and elected a Foreign Member.

*Exhibitions, &c.*

Mr. Bond exhibited, on behalf of Mr. N. Cooke, of Liscard, near Birkenhead, a female variety of Hepialus humuli, pale in colour, and with the usual markings; three fine specimens of Crymodes exulis; fifteen very fine dark (some nearly black) specimens of Epunda lutulenta; and six specimens of the new Tortrix, Sericoris irriguana. All the above were taken near Loch Laggan this season.

Mr. Stevens mentioned that a specimen of Callimorpha Hera (the Jersey tiger-moth) had been taken at St. Margaret's Bay, near Dover.

The Secretary read a note from the Rev. Fitzroy Kelly Lloyd, of Pittenweem, N. B., enclosing for inspection a worm measuring two inches in length, extracted from the abdomen of an earwig. Mr. Pascoe said that it was one of the Nematode worms, and was probably a Filaria.

Mr. Forbes exhibited a weevil (evidently not indigenous to Britain), taken alive amongst some Orchids at Highgate, supposed to have been imported from Ecuador. Mr. Pascoe pronounced it to be a Cholus. He subsequently gave the following diagnosis, under the name of

Cholus Forbesii.

C. ovatus, niveo-squamatus, maculis nudis aterrimis variegatus, quarum una in medio elytrorum majuscula, supra rugoso-punctatus; rostro pedibusque fortiter punctatis. Long. (rostr. excl.) 5 lin.

Mr. William Cole exhibited several series of specimens of Ennomos angularia, which he had bred, from eggs laid by the same female, with a view to ascertain whether any changes could be traced to the influence of the food-plant. The result went to show that no marked change in colouration took place in the specimens which were fed on oak, hawthorn, lime or lilac, although, taken as a whole, they were all less richly yellowish than a number of specimens taken at large, a series of which was exhibited for the sake of comparison. As was to be expected, the size and fineness of the specimens varied much with the change of food, oak producing the largest, and lilac the meanest specimens.

Mr. Enock exhibited microscopic slides containing some beautiful preparations of Polynema ovulorum, one of the Proctotrypidæ, and other minute Hymenoptera.

A letter was read from Mr. E. Higgins with reference to some specimens of Deilephila Euphorbiæ, exhibited at a meeting of the Society on the 17th of September, 1873, which were then stated to have been captured in the larva state in the neighbourhood of Harwich. Some doubt was expressed at the time, as it was stated that the food-plant did not grow in that neighbourhood; but about the middle of September last he had visited Harwich, in company with Mr. E. W. Janson, and they were afterwards joined by Mr. Durand (from whom he had received the specimens of D. Euphorbiæ), who undertook to show them the place of capture, and they not only found the food-plant growing there, but in three other places nearly half a mile further on.

*Paper read.*

Mr. Frederick Smith communicated "Descriptions of new Species of Cryptoceridæ belonging to the Genera Cryptocerus, Meranoplus and

Cataulacus," accompanied by a plate containing figures of all the species, twelve in number; thus raising the number of species described by him to forty-eight. The descriptions were preceded by some interesting particulars relative to the habits of these insects, especially of Meranoplus intrudens, which constructs its formicarium in the thorns of a species of Acacia, some four to five inches in length; and at a distance of about half an inch from the pointed end a small round hole was made by the ants, which served for ingress and egress to and from the nest. The thorns contained a kind of spongy pith, in which the channels and chambers of the nest were constructed.

*New Part of the Society's Catalogue of British Insects.*

"A Catalogue of the British Hemiptera-Heteroptera and Homoptera (Cicadaria and Phytophthires)," compiled by Messrs. J. W. Douglas and John Scott, was on the table. This was the fifth Catalogue of British Insects published by the Society.

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November 1, 1876.

Professor Westwood, M.A., President, in the chair.

*Additions to the Library.*

The following donations were announced, and thanks voted to the donors:—'Proceedings of the Zoological Society,' 1876, parts ii. and iii.; by the Society. 'The Zoologist' and 'Newman's Entomologist' for November; by the Representatives of the late Edward Newman. 'The Entomologist's Monthly Magazine' for November; by the Editors. 'The Naturalist; Journal of the West Riding Consolidated Naturalists' Society,' no. xvi.; by the Editor. 'Nature,' nos. 362—365; by the Publishers. 'L'Abeille,' nos. 180 and 181; by the Editor, M. S. A. de Marseul. 'Iconographie de Chenilles et Lepidoptères inedits,' par E. Millière, tom. iii., part 35 (concluding the work); by J. W. Dunning. 'Catalogo della Collezione di Insetti Italiani del R. Museo di Firenze,' serie 1a, Coleotteri; 'Bulletino della Societa Entomologica Italiana,' anno ottavo, trimestre iii.; by the Society. 'Horæ Societatis Entomologicæ Rossicæ,' t. xi., nos. 2, 3 and 4; by the Entomological Society of Russia. 'The American Naturalist,' vol. x., nos. 9 and 10; by the Editor. 'Transactions of the Academy of Science of St. Louis,' vol. iii., nos. 1—3; by the Society.

*Exhibitions, &c.*

Mr. F. Smith exhibited some remarkable specimens of thorns from Natal and Brazil, which had been taken possession of by certain species of

Cryptoceridæ for the construction of their formicaria: some of them were as much as three inches in length.

Mr. Champion exhibited a bug sent by Mr. Walker from Besika Bay. It was figured in Guerin's Mag. de Zool. under the name of Mustha spinosula.

Professor Westwood mentioned that a caterpillar had been forwarded to him from Deal, the captor complaining that he had suffered from considerable irritation of the skin, caused by the hairs of the insect, and that the irritation had continued for a week afterwards. It was the larva of Lasiocampa rubi.

The Professor exhibited a singular Coleopterous larva, from Zanzibar, of a flattened, ovate form and a steel-blue colour, with two points at the extremity of the body and with long clavate antennæ: the head bore some resemblance to that of the Dipterous genus Diopsis. He also exhibited a specimen of the butterfly Hesperia Sylvanus, received from the Rev. Mr. Higgins, of Liverpool, having the pollinaria, apparently of an orchid, attached to the base of the tongue. Also the bulb of an orchid, purchased by Mr. Hewitson with a collection of roots from Ecuador, which was found to contain nine living specimens of cockroaches, comprising six different species, *viz.*, Blatta orientalis, Americana, cinerea, Maderæ, and two others unknown to him, some being of considerable size.

Professor Westwood alluded to the varied nature of the collection recently exhibited at the "Exposition des Insectes utiles et des Insectes nuisibles," in Paris, and remarked on the absence in the list of exhibitors of the names of many distinguished French entomologists.

Mr. Dunning read the following:—

*Note on Acentropus.*

"In the Transactions of the Entomological Society of the Netherlands for the present year (Tijd. v. Entom. xix. 1), Heer Ritsema has published a Second Supplement to his 'Historical Review of the genus Acentropus;' and the author, writing in June, 1875, prefaces it with the welcome announcement that he has worked up the literature to the present time, 'as in all probability I shall be able in this summer to complete the history of the mode of life and the different stages of A. niveus.'

"Whether this expectation has been fulfilled, either in 1875 or 1876, I do not know. But, however this may be, I am sure Heer Ritsema will be glad to learn that, though he and I failed to convince Newman that the genus is properly placed in the Lepidoptera, we did make a convert of Doubleday. In a Supplement to his 'Synonymic List of British Lepidoptera,' published in 1873, Doubleday for the first time admitted Acentropus into that order. Its precise place in the order is not indicated, but it is immediately followed in the Supplement by a species of Ebulea

(Botydæ), which sufficiently shows that the position which Doubleday would assign to Acentropus is in or near the Hydrocampidæ.

"It may possibly be remembered that, in a paper which the Society did me the honour to publish in the 'Transactions' for 1872 (pp. 121 and 281), I adduced some arguments tending to show that there is really one species, and one only, of this genus; and in a note on p. 156, the position is thus summed up;—'I am quite in accord with Ritsema when he says that A. Hansoni, Garnonsii, Nevæ, badensis and germanicus are not specifically distinct from A. niveus; but I go a step further, and say that A. latipennis is identical with A. Hansoni.' Ritsema is now satisfied that A. latipennis is identical with A. Hansoni, but still thinks that there are two species, of which one (A. niveus, *Oliv.* = A. Garnonsii, *Curt.*) has a female with rudimentary wings, and the other (A. latipennis, *Möschl.* = Zancle Hansoni, *Ste.*) has a female with normally developed wings. Doubleday, in the Supplementary Catalogue already mentioned, does not go into the synonymy at length, but records one species only, under the name of A. niveus, giving latipennis as a variety, thus:—

ACENTROPUS NIVEUS. *Niveus*, Olivier?
*latipennis*, Möschl., *var.*

"I am not able to throw any further light on the specific identity or distinctness of the two forms. Ritsema, however, refers to his having found many specimens, all males, at Arnheim, and to the capture at Huissen (near Arnheim) of a winged female, which he recognises as A. latipennis. 'By this capture' (says he, at p. 15), 'I am fortified afresh in the opinion that there are *two* species. . . . . For it would be otherwise inexplicable that amongst the innumerable winged individuals captured by me at Overween, not a single female occurred, and that I, by *breeding* from larvæ coming from the same place, obtained only females (in number already amounting to fifteen), which were furnished with wing-rudiments and live in the water, whilst the first specimen that is *captured* at Huissen, inside the house at a lamp, is a female with well-developed wings.' I must confess that I cannot follow this reasoning. Be it remembered that no difference is suggested in the males from the different localities, and the supposed distinctness of the species rests entirely on the possession by the females in the one case of developed and in the other of rudimentary wings. From Arnheim and Huissen, males, and one winged female captured; from Overween, males, and fifteen unwinged females bred. *Ergo*, two species! Surely this is a *non sequitur*. It is, in fact, a repetition of Brown's argument (with which I dealt in the 'Transactions' for 1872, p. 142), that the winged female occurs in one locality, and the apterous females in another locality. I can scarcely see how the facts mentioned by Ritsema can be said to fortify any

opinion one way or the other. So far from proving the duality, they are quite consistent with the unity of the species. And recalling the facts that Curtis and Dale took both forms of female at Glanville's Wootton, that Brown bred the apterous and McLachlan captured the winged form at Burton, and lastly that Ritsema himself, in 1870, found pupæ at Haarlem from which two females emerged, of which one had rudimentary and the other well-developed wings, I venture to hazard a conjecture, that if Ritsema perseveres with his breeding from Overween larvæ, he will obtain some females with wings as ample as those which flew to the lamp at Huissen.

"In conclusion, one word of regret, a tribute to Members this Society has lost. In the short period since the publication of my former paper on Acentropus, of those to whom I then referred as living authors, death has removed no less than three—Henry Doubleday, Edward Newman and Edwin Brown."

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December 6, 1876.

Sir Sidney Smith Saunders, C.M.G., Vice-President, in the chair.

*Additions to the Library.*

The following donations were announced, and thanks voted to the donors:—'Proceedings of the Royal Society,' nos. 173 and 174; presented by the Society. 'The Zoologist' and 'Newman's Entomologist' for December; by T. P. Newman. 'Entomologist's Monthly Magazine' for December; by the Editors. 'The Naturalist; Journal of the West Riding Consolidated Naturalists' Society,' no. 17; by the Society. 'Nature,' nos. 366—370; by the Publishers. 'A Monographic Revision and Synopsis of the Trichoptera of the European Fauna;' by the Author, Robert McLachlan. 'British Gall Insects;' by the Author, Albert Müller, of Basle. 'The Canadian Entomologist,' vol. viii., nos. 9 and 10; by the Editor. 'L'Abeille,' no. 182; by the Editor. 'La Famille des Ephémérines,' par le Rev. A. E. Eaton, traduit de l'Anglais; by the Translator, Dr. Emile Joly. 'Tijdschrift voor Entomologie,' 3e & 4e Aflevering, 1875-6; by the Entomological Society of the Netherlands. 'Entomologische Monographieen,' von Dr. Fr. Klug; presented by Edward Sheppard, Esq. 'Die Schmetterlinge Deutschlands und der Schweiz,' Band ii., Heft 2; by the Authors, H. v. Heinemann and Dr. Wocke. 'Genera Cimicidarum Europæ,' disposuit O. M. Reuter; 'Capsinæ ex America boreali in Museo Holmiensi asservatæ,' descriptæ ab O. M. Reuter; 'Bidrag till Kännedomen om Syrphus flugornas larfver och puppor,' af Filip Trybom; 'Species Tortricum et Tinearum Scandinaviæ,' enumeravit

H. D. J. Wallengren; 'Insecta Transvaaliensia, Bidrag till Transvaalska Republikens i Södra Afrika Insekt-fauna,' af H. D. J. Wallengren; 'Tvenne för Skandinaviens Fauna nya Pyralider,' af H. D. J. Wallengren; by the Royal Swedish Academy of Sciences of Stockholm.

*Election of Members.*

M. Eduard Grubé, Director of the Zoological Museum of the University of Breslau, and Dr. Katter, of Putbus, in the Island of Rügen, were balloted for and elected Foreign Members. Lord Dormer, formerly a Subscriber to the Society, was re-elected a Subscriber.

*Exhibitions, &c.*

Mr. McLachlan (on behalf of Mr. W. Denison Roebuck, of Leeds) exhibited some locusts, a swarm of which had been observed to pass over Yorkshire during last autumn. He had examined the specimens carefully, and had compared them with the descriptions of the two species which occasionally visited this country, *viz.*, Pachytylus migratorius and P. cinerascens; and he had come to the conclusion that the specimens belonged to P. cinerascens, which he remarked was supposed to breed in some parts of the north of Europe, and therefore might be expected more frequently in this country.

Mr. W. C. Boyd exhibited living larvæ of Brachycentrus subnubilus, in their quadrilateral cases, reared from the eggs. They were of much larger size than those previously exhibited by him at the November meeting in 1873, being more than half an inch long.

Mr. S. Stevens (on behalf of Mr. Edwin Birchall) exhibited a specimen of Cirrhœdia xerampelina, *var.* unicolor, Agrotis lucernea, *var.* latens, and what appeared to be a small *var.* of Zygæna filipendulæ, with the pupa-case and cocoon. They were all taken by Mr. Birchall in the Isle of Man.

Mr. Meldola referred to a request made by Mr. Riley at the meeting in July, 1875, that entomologists would supply him with the cocoons of the parasite, Microgaster glomeratus, which were much wanted in America to destroy the numerous specimens of Pieris rapæ which had been imported into that country. Mr. McLachlan had at a subsequent meeting stated that M. glomeratus was parasitic on P. brassicæ, but doubted if it ever attacked P. rapæ, and Mr. Meldola now exhibited the insects he had found parasitic on these two species—that on P. rapæ being Pteromalus imbutus, *Waltl.* (one of the Chalcididæ), while on P. Brassicæ he had observed Microgaster glomeratus and a Dipterous species, Tachina augusta. Specimens of all of them were exhibited. Mr. E. A. Fitch remarked that Van Vollenhoven had obtained Pimpla examinator from P. Napi.

Mr. Smith stated that he had received a nest of Osmia muraria, sent to him from Switzerland. The cells were empty, the Osmiæ having taken

their departure, but one closed cell was observed to contain a yellow larva, which ultimately proved to be that of a beetle belonging to the Cleridæ, Trichodes alvearius.

Mr. Hamilton James, of Truro, forwarded a photograph of a specimen of Deiopeia pulchella, taken on the 12th October last at Portscatter, near Falmouth, stating that it was considered a very rare insect in Cornwall.

Sir Sidney S. Saunders exhibited a large box of insects of all orders, which had been collected in Corfu by Mr. Whitfield, and were now for sale.

Sir Sidney Saunders also exhibited several larvæ of Meloïdæ in their first stage, received from M. Jules Lichtenstein, of Montpellier, consisting of—

1. The primary larval form of Sitaris Colletes (*Mayet*), found on Colletes succincta, feeding on ivy-blossoms in September, the former described by M. Valéry Mayet in the 'Annales' of the French Entomological Society, 1875.

2. The same larval stage of Mylabris melanura obtained from the egg, which M. Lichtenstein had not succeeded in rearing to the second stage. Like other larvæ of Meloïdæ in their primary form, it is furnished with triple tarsal appendages. A description of this larva will appear in the aforesaid 'Annales.'

3. The exuviæ of the primary larva of Meloë cicatricosus (from the egg), and also the *second* stage of the same larva, still bearing legs.

4. The primary larva of Meloë proscarabæus (?), differing from the foregoing in the structure of the antennæ. Taken on an Andrena.

5. The corresponding larval stage of Meloë autumnalis (?), also differing as aforesaid. Taken on Scolia hirta.

Also specimens of the Phylloxera of the vine in various stages, consisting of—*a*. The root-type; *b*. The leaf-gall type; *c*. The winged stage; *d*. The male of the apterous sexual race.

Mr. C. O. Waterhouse made some remarks on the 'Catalogus Coleopterorum' of Gemminger and v. Harold, the concluding volume of which was now published. The total number of generic names given is 11,618, of which 7364 are adopted genera, and 4254 appear as synonyms. The total number of species recorded is 77,008. Dejean's first Catalogue, published in 1821, gave 6692 species, while that of 1837 (the third edition) gave 22,399 species, of which, however, only a portion were then described. Taking into consideration the number of species described during the publication of the Munich Catalogue, the number of described species at the present date could not be less than 80,000. Thus, since 1821, the known species of Coleoptera had increased twelvefold.

Mr. C. O. Waterhouse read "Descriptions of Twenty New Species of Coleoptera from various Localities."

# ANNUAL MEETING,

January 17, 1877.

Sir Sidney Smith Saunders, C.M.G., Vice-President, in the chair.

An Abstract of the Treasurer's Accounts for 1876 was read by Mr. Dunning, one of the Auditors, showing a balance of £6 8*s*. in favour of the Society.

The Secretary then read the following;—

## Report of the Council for 1876.

In accordance with the Bye-Laws, the Council begs to present the following Report:—

During the year 1876 the Society has elected twenty-three new Members or Subscribers, and has lost ten by death or resignation. Among the losses by death is that of Edward Newman, who was an original Member of the Society, one of the first Council, and filled the office of President in the years 1853-4.

The 'Transactions' for the year (exclusive of the 'Proceedings') form a volume of 655 pages, containing twenty memoirs, with twelve plates, of which two are coloured. The Society has to thank Mr. Wakefield for the plate of New Zealand Hymenoptera, and Professor Westwood and Mr. Smith for the plates in illustration of their papers. And a second donation of £10 by Mr. Robinson-Douglas, to be applied to the publication of papers on British or European Entomology, has been appropriated to the memoirs on British Hemiptera, which have been contributed by Messrs. Edward Saunders and John Scott.

Another part of the 'General Catalogue of British Insects' has also been issued, comprising the Hemiptera (Heteroptera, and the main portion of the Homoptera), for the compilation of which the Society is indebted to Messrs. Douglas and Scott.

No less than six Compositions or Life Subscriptions have been received, and of these five have been invested in augmentation of the Reserve Fund, whilst the remaining one has been applied in the purchase of books. The additions to the Library, both by donation and by purchase, have been many and valuable; and a large number of books and pamphlets have been carefully collated and bound.

The stock of 'Transactions' for the five previous years has been made up into volumes, and the colouring of the plates has involved considerable outlay, from which, however, a return will be gradually received.

The total expenditure for both ordinary and extraordinary purposes has amounted to £609. It is satisfactory to find that the ordinary income would have sufficed to meet the ordinary outgoings, but it has only been by special donations that the Council has had it in its power to accomplish all that has been done, and the Society is indebted to Mr. Dunning for a donation of £150.

The financial account for the year may be thus summarized:—

| Receipts. | | Payments. | |
|---|---|---|---|
| Balance in hand | £63 | Rent, Office and Meeting Expenses | £131 |
| Contributions of Members | 197 | Publications | 241 |
| Life Compositions | 95 | Compositions invested | 79 |
| Sale of Publications | 52 | Library | 51 |
| Interest on Consols | 9 | Catalogue of Hemiptera | 49 |
| Donations | 199 | Back Volumes, binding and colouring | 58 |
| | £615 | | £609 |

The Bye-Laws have been reprinted, with the alterations adopted by the Society; and twenty-eight Town Members have availed themselves of the new regulation (see Chap. 15) enabling them to secure, by prepayment of half-a-guinea, the same advantages in respect of the receipt of the 'Transactions' as are enjoyed by our Country Members. It is hoped that other Town Members will take advantage of the Rule, under which the 'Transactions' are forwarded to them by post on the day of publication.

The most important alteration effected in the Bye-Laws was that by which the Society, adopting the suggestion contained in the last Annual Report, determined to appoint a Member of the Council to the office of Librarian. Leaving the ministerial duties connected with the Library to a salaried Sub-Librarian, the object of the Council was and is to obtain the services of some Member of our body whose acquaintance with entomological literature will enable him to advise the Council in all matters connected with the Library, whose linguistic acquirements will facilitate correspondence and the maintenance of friendly relations with Entomological Societies abroad, and whose avocations will permit of his attending at stated times at the Society's Rooms to render assistance to those wishing to consult the contents of our shelves—in short, an officer whose special object it shall be to see that the Library is made worthy of the Society's position and advances with it, and whose special aim it shall

be to give such help to students and others as shall render our Library most available for the purposes of research or reference. Instead of once a-week, as previously, the Library has, during the past year, been open every day; the frequent visits of our Members, and the number of volumes borrowed, sufficiently attest the need for, and the convenience of this arrangement; and in order to give still further effect to the policy of making the Library as accessible and useful as is possible, the Society has this evening to put the new Bye-Law in force, and proceed to the election of an Honorary Librarian.

In conclusion, the Council feels justified in saying that this year has not been one of inactivity. The number of our Members, both at home and abroad, has become somewhat larger; our Library grows, and is increasingly used; our meetings maintain their interest; and our publications, both in extent and scientific value, are equal to those of any former period of the Society's existence.

*11, Chandos Street, Cavendish Square,*
*17th January, 1877.*

The following gentlemen were elected Members of Council for 1877:— Sir Sidney Smith Saunders, Professor Westwood, Rev. A. E. Eaton, Rev. T. A. Marshall, and Messrs. H. W. Bates, G. C. Champion, J. W. Douglas, J. W. Dunning, F. Grut, R. Meldola, E. Saunders, H. T. Stainton, and J. Jenner Weir.

The following officers were subsequently elected for the year 1877:— President, Professor Westwood, M.A., F.L.S., &c.; Treasurer, J. Jenner Weir; Hon. Secretaries, Messrs. F. Grut and R. Meldola; Hon. Librarian, Rev. T. A. Marshall.

The President (Prof. Westwood) having been unfortunately prevented from attending by an accident, the reading of his Address on the progress of Entomology for the past year was unavoidably postponed until the next meeting, on the 7th February.

A cordial vote of thanks was given to the President, with an expression of regret at the cause of his absence on this occasion. A vote of thanks was also given to the Treasurer and Secretaries; and a special vote in acknowledgment of Mr. Dunning's munificent donation of £150, towards the extraordinary expenses of the Society.

## Abstract of Treasurer's Account for 1876.

| Receipts. | £ | s. | d. | Payments. | £ | s. | d. |
|---|---|---|---|---|---|---|---|
| Balance in hand from last Account | 63 | 3 | 11 | Rent, Librarian and Office Expenses, Teas, &c. | 130 | 11 | 7 |
| Arrears of Subscriptions received in 1876 | 10 | 10 | 0 | Printing | 192 | 4 | 0 |
| Subscriptions for 1876 | 155 | 8 | 0 | Plates—Engraving & Printing | 49 | 11 | 1 |
| Admission Fees | 31 | 10 | 0 | Books purchased and Binding | 50 | 13 | 9 |
| Compositions | 94 | 10 | 0 | Catalogues, printing of | 48 | 18 | 3 |
| Donations | 199 | 0 | 6 | Back Volumes, colouring and binding | 58 | 8 | 2 |
| Sale of Publications | 52 | 11 | 3 | Compositions invested in the year | 78 | 15 | 0 |
| Dividend on £297 9*s.* 9*d.* Consols | 8 | 16 | 2 | Balance in the hands of Treasurer | 6 | 8 | 0 |
| | £615 | 9 | 10 | | £615 | 9 | 10 |

Audited and found correct, *January* 10, 1877.
J. W. May.
R. M'Lachlan.
J. W. Dunning.

### *Assets of the Society.*

| | £ | s. | d. |
|---|---|---|---|
| Arrears of Subscriptions considered good | 21 | 0 | 0 |
| Cost of £297 9*s.* 9*d.* 3 ℔ Cent. Consols | 277 | 9 | 0 |
| Cash Balance in hand | 6 | 8 | 0 |
| | £304 | 17 | 0 |

J. JENNER WEIR, *Treasurer.*

*January* 10, 1877.

# THE PRESIDENT'S ADDRESS.

Gentlemen,

In commencing the Address which the custom of the Society has, I think advantageously, rendered an annual necessity, I must again return you my best thanks for the renewed honour you have conferred on me in electing me your President; expressing at the same time my conviction that you would have acted more wisely, and for the greater good of the Society, had you chosen a younger and more active member of the Society for the office, and one who, resident in London, could have taken a more continuous share in its affairs.

The Report from the Council, which you have heard read, and which will be appended to this Address, will have shown you the position of the Society both in regard to its pecuniary state and as to the increase of new, and decrease by death of several of our long much-valued members, as well as the greater and more liberal facilities for usefulness which have been introduced into its administration, and which in my humble opinion ought to insure an enlarged support. And here I cannot avoid calling your attention to the extreme liberality of several of our members, who, seeing the advantages of such increased facilities, and the necessity of the publication of various valuable memoirs laid before the Society (such as those offered to the Ray Society, which, except for the means of publication adopted by that Society, would never have seen the light), have, by their renewed contributions with no unsparing hand, enabled the Society to publish them, and to effect the other measures mentioned in the Report of the Council. Other Societies for the advancement of our Science in other countries, receive Government help, and I cannot but think that it is a false policy to withhold from a small Society like ours, which has for so many years been doing good and beneficial work, a portion of that support which is granted to other better endowed and chartered Societies. Let us hope that

a more liberal policy may soon be adopted by the "ruling powers."

## Obituary.

We have to lament the loss by death of four of our members—Edward Newman, Edwin Brown, Trovey Blackmore, and Jacob Birt. Of these Edward Newman stands in the foremost rank, as one of the few of the foundation members which time had spared to us.

Edward Newman, F.L.S., F.Z.S., &c., was born on the 13th of May, 1801, and died on the 12th of June, 1876. From a biographical notice published as a preface, or rather postscript, to the last volume of 'The Zoologist,' it appears that from his earliest childhood he was devoted to the observation of natural objects, especially plants, birds, and butterflies. This general love of Nature was seen throughout all his future long and most active life, and resulted in the publication of his works on ferns, the 'Dictionary of British Birds' (a re-issue of Montagu, with additions from Selby, Yarrell, &c.), 'Birds-nesting,' the 'Illustrated Natural History of Britsh Moths' and its companion volume of British Butterflies, the 'Letters of Rusticus,' but more especially in his establishing, editing, or extensively contributing to various miscellaneous works on Natural History, as the 'Zoologist,' the 'Entomological Magazine,' the 'Entomologist,' the 'Phytologist,' the 'Field,' the 'Young England,' the 'Friend,' &c., in all of which great numbers of his articles are to be found. Of entomological works his 'Sphinx Vespiformis' was an ingenious parody on MacLeay's 'Horæ Entomologiæ,' in which he futilely attempted to arrange natural objects, even down to genera, in a septenary system, and which he endeavoured further to develop in some of his papers in the 'Entomological Magazine': his 'Grammar of Entomology' was, as it has been termed in the 'Zoologist,' "a most useful little work;" his 'Insect Hunters' was a clever paraphrase of the last-named work in Hiawathi verse, and, thanks to the very excellent wood engravings, his 'British Butterflies' and 'British Moths' are of lasting value, although the title of the last-mentioned work is deceptive, as the extensive families of Pyralidæ, Tortricidæ, Tineidæ, and Alucitidæ are omitted, and although the work does not contain a single figure of the preparatory states of any of the species. From the

memoir in the 'Zoologist' it now appears that in addition to the numerous articles which he published in his own name, he assumed at different times the "various pseudonyms, 'Corderius Secundus,' 'E. N. D.,' 'Rusticus,' and others." The memoirs published under his own name up to the year 1860 are recorded in Dr. Hagen's 'Bibliographia Entomologica,' but it is desirable that a complete list of his subsequent works, including those which he published under fictitious names, should be given to the public.

Edwin Brown, of Burton-upon-Trent, died on the 1st of September last, aged fifty-seven. He was a general naturalist, and had formed large collections of geological, botanical, and zoological specimens, but with an especial predilection for insects, of which, regardless of expense, he had amassed a very valuable collection. In 1842 he published a notice of Locusta migratoria in the 'Annals of Natural History,' and in 1863 he contributed the entomological portion of Sir Oswald Moseley's 'Natural History of Tutbury,' in which he published an account with figures of the preparatory stages of the genus Acentropus, fully confirming the opinion which I had ventured to express years previously in our 'Transactions' (vol. i., p. 18), that the insect belonged to the order Lepidoptera.

Trovey Blackmore died on the 3rd of last September, at the age of forty-one. He had made a collection of the insects of North Africa (which he had visited for the sake of his health), but I am not aware that either he or Mr. Jacob Birt, our other lost member, had published any entomological memoir or notice.

Thomas Wilkinson, of Scarborough, died on the 13th of April, at the age of fifty-eight years. He was well known as a most indefatigable and excellent Micro-Lepidopterist, having carefully investigated the life-history of many minute species of moths, of which he had discovered a considerable number of new species.*

The Obituary of our Science during the past year, moreover, comprises several other well-known and lamented names.

Dr. Ludwig Redtenbacher, the Director of the Imperial Museum of Natural History in Vienna, died on the 8th of February, 1876, in his sixty-third year. He was educated with his brothers in the Gymnasium attached to the Great Monastery

* The deceased entomologist here alluded to must not be confounded with Mr. S. J. Wilkinson, the author of the valued work on British Tortricidæ.

of Kremsminster. From 1834 to 1840 he worked as a voluntary assistant in the Vienna Museum. In 1840 he took the degree of Doctor in Medicine; in 1851 he was made Professor of Zoology in the University of Prague, from whence he was recalled by the Emperor to the Museum of Vienna as Custos-adjunct, and in 1860 the Directorship of the Museum was conferred upon him. His chief published works were the Coleopterous part of the Fauna Austriæ, which has gone through three editions, the same portion of the work known as the 'Voyage of the Novara,' and his descriptions of the beetles of Kotschy's collections from Syria and Western Taurus.

Entomology in Vienna has, moreover, experienced a further loss in the death of Count Johann Angelo Ferrari, who had for many years been the especial Custos of the Coleopterous portion of the Imperial Museum, and who died on the 18th of May last. In Munich, also, Dr. Frischmann, the Conservator of the Museum of Natural History, died on the 11th of February; and on the 20th of May died Johann Heinrich Kaltenbach, of Aix la Chapelle, who was born on the 30th of October, 1807, at Cologne. His principal works had reference to the insects destructive to vegetation, and his Monograph of the Aphidæ is a classical work.

We have also to lament the death of Herr C. H. Hopffer, the talented assistant to the Entomological Department of the Berlin Museum, whose attention was especially devoted to Exotic Lepidoptera, of which he published various new species, some of which appeared as a second part of Dr. Klug's 'Neue oder weniger bekannte Schmetterlinge.'

The death of Mr. W. S. Atkinson, of Calcutta, must also be recorded. He was a very industrious collector of Lepidoptera for many years in India, and we are indebted to him for a description and figure of Butanites Lidderdalii, one of the most interesting species of butterflies which has ever been published. His collections have been purchased by Mr. Hewitson, but the Heterocerous portion of them has been transferred to Herr Staudinger, although it is understood that the new species are in the hands of Mr. F. Moore for publication.

## Evolution of Species.

The principle of the Evolution of Species is a subject which is, at the present time, attracting so great a share of the attention of naturalists, as well as of the general thinking public, that it is necessary here to allude to such investigations as have been made with reference to it in an especial manner upon the objects of our study. The question to be solved appears to me to be this :—Do the variations which exist, *in a state of Nature*, amongst the various individuals of recognized species warrant the conclusion that the species themselves are only modifications of other precedent species, which may themselves be ultimately referred back to some supposed primeval type ? This field of enquiry is far too vast to be more than glanced at in an Address like the present, but so far as my own observations—for now more than half a century, over the most extensive of all the tribes of Nature —extend, I cannot come to any other conclusion than that the variations alluded to above never extend beyond the genuine limits of the species. I had hoped that long before this time Mr. Darwin would have published his promised work on the modifications of species in a state of Nature, and it must be evident that this will be the true *crux* of his system. To affirm that the discovery of a new species, either fossil or recent, which is found to be intermediate in certain portions of its structure between already known and distinct forms, is a clear proof that the newly discovered species is a descendant from one and a progenitor of the other of such known forms, appears to me to be fallacious. No entomologist, I venture to affirm, has come to the conclusion that Carabus Cychrocephalus, although the intervening link between Carabus and Cychrus, is a descendant from Carabus and a progenitor of Cychrus, or *vice versâ*. On the other hand, a naturalist who believes in a grand and harmonious "Systema Naturæ," whether that be, as Linneus suggested, in the likeness of a "mappa geographica" or otherwise, has equal or even greater right to assume that these newly-discovered species are only so many hitherto unknown intervening links in the great scheme of the creation. "Osculant groups" and "connecting links" are terms well known to zoologists before the publication of the 'Origin of Species,' with a definite meaning quite distinct

from the idea that they formed the genetic connection between the great groups which they serve to connect.*

A memoir on the "Ontogenie" and "Philogenie" of insects, by Dr. Paul Meyer, is published in the tenth volume, or vol. 3 of the new series, of the 'Zeitschrift für Naturwissenschaft' of Jena, 2nd Heft.

A very valuable contribution to the knowledge of the earliest stages of many of the higher Crustacea is to be found in 'Untersuchungen zur Erforschung der Genealogischen Grundlage des Crustaceen Systems—Ein Beitrag zur Descendenzlehre,' pp. 124, folio, Wien, 1876, with nineteen plates and twenty-five woodcuts, by Carl Claus. In this work the author gives the most careful descriptions and figures of the larvæ or zoea states of numerous species of Palæmonidæ, Squillidæ, Nebalia, Sergestes, Palinurus, Scyllarus, Pagurus, Porcellana, Maia, Inachus, &c., with additional descriptions and details of the Copepoda, Cirripedia,

* In the course of his introductory lecture to the Natural History Class in the University of Edinburgh at the commencement of last November Term, Professor Sir Wyville Thomson made reference to the evolution hypothesis. He said that the great stumbling block, from the natural history side of the question, in the way of our at once accepting the evolution hypothesis, was that any such passage from one species to anything but that, was entirely outside our experience. The horse evidently had been the horse since the earliest hieroglyphs were engraved on Assyrian monuments and tombs; and the same held for all living creatures. There was not a shadow of evidence of one species having past into another during the period of human record or tradition. Nor was this all: we had, in the fossil remains contained in the rocks, a sculptured record of the inhabitants of this world, running back incalculably further than the earliest chisel mark inscribed by man—incalculably further than man's existence on this planet; and although we found from that record that thousands of species had passed away, and thousands had appeared, in no single case had we yet found the series of transitional forms imperceptibly gliding into one another and uniting two clearly distinct species by a continuous bridge, which could be cited as an undoubted instance of the origin of a species. Profound mystery still involved the birth of the new specific forms. Mr. Darwin's magnificent theory of "natural selection" and the "survival of the fittest," had undoubtedly shaken the veil by pointing out a path by which it was conceivable that such an end might be attained; but it had by no means raised it, for every new instance which he produced and developed with such eloquence and skill, of the marvellous changes which animals underwent under varying conditions, somehow always appeared to emphasize the fact that, however far variations might be carried, the limit of specific identity was in our experience never overpassed. Still, even if we never found out the precise mode in which one species gave rise to another, there could, he believed, be no further hesitation in accepting generally a hypothesis of evolution, and in regarding our present living races as the ultimate twigs of a great genealogical tree whose gradually coalescing branches we could trace downward, if our information were complete, to the dawn of geological time.

Ostracoda, Phyllopoda, and Urphyllopoda, terminating with the Trilobites, Merostomidæ, and Xiphosura, &c., endeavouring to deduce from the forms of the larvæ the comparative development or descent of the higher Crustacea from the lower. The forms of some of these preparatory states are certainly amongst the most *bizarre* of the Annulose sub-kingdom. The book is dedicated to Charles Darwin.

A remarkable memoir by W. J. Schmankewitsch on Artemia salina and Mülhausenii, and on the genus Branchipus, is published in Von Siebold and Kolliker's 'Zeitschrift' (Bd. xxv., Suppl., noticed in 'Nature,' June 8, 1876), in which the author asserts that he had observed that Artemia salina, found in a salt lake near Odessa, had gradually undergone a change in the form of the extremity of its post-abdomen, according to the degree of saltness of the water; the bifurcation of this part of the body gradually diminishing, as well as the number of its terminal setæ, until the tail became rounded at its extremity, with only a slight central notch, agreeing in this respect and also in the then smaller size of the animal, with Artemia Mülhausenii of Fischer (Bull. Mosc. t. 7). The opposite experiment also showed that even in a few weeks the latter species became altered in the direction of A. salina, which last species, by the still greater dilution of the salt water, is asserted to have been transformed in the third generation into a Branchipus agreeing with the latter in the post-abdomen having one more segment. Hence it is assumed that the direct influence of changed conditions of life may in the course of a few generations transform one species, or even one genus, into another, and this in both directions. This statement, however, appears to me to require much further investigation than appears to have been bestowed upon it. We know, in fact, from the researches of Vaughan Thompson (Zool. Researches, No. 5, pl. 2, fig. 9), that the extremity of the post-abdomen of the nearly perfect Artemia salina is rounded with a slight central notch, and without any spines, and that the differences between the terminal appendages of Artemia salina and Branchipus, as well as their mouth-organs, ignored by our author, are very great, whereas there is not the slightest difference between the extremity of the body of A. salina and that of its supposed passage to Branchipus as figured by Schmankewitsch, beyond the division of the long terminal segment of Artemia into two apparent

segments in the supposed transitional individuals. Can it be possible that Artemia Mülhausenii may be an imperfectly retarded condition of A. salina, similar to the imperfect state of the great majority of individuals of Lygæus brevipennis, or Velia rivulorum? I attach but little weight to the parthenogenetic observations in this memoir, as we know perfectly from various English Lepidoptera that parthenogenesis affords no test of specific distinction.

In 'Nature' for December 28, 1876, appears an article "On the Relation between Flowers and Insects," translated from the 'Bienen Zeitung,' the author of which assumes that the capacity for gathering honey either for the sustenance of the insect or its progeny is to be regarded as the test of the evolutionary process employed in the development of these insects; the author remarking that "the habit possessed by our honey-bee of feeding itself from flowers, and its corresponding faculty of deciding amongst different species and divining the situation of the honey, is, in the first instance, derived from the common parents of all the Hymenoptera. It probably even comes from such remote ancestors as the leaf-cutting wasp (*sic*),* from thence passes to the gall-flies, the Ichneumons, and the hunting wasps, from which latter it goes to the allied species of ants and bees." This extraordinary series of assumptions is founded upon a set of tables showing the number of visits paid to flowers in which the honey is apparent, partially apparent, concealed but easily reached by a short or by a long proboscis or not reachable, or which are only furnished with pollen, commencing with Tenthredo and ending with "Bombus apis" (*sic*). Even supposing these various tables were correct, I feel called on to insist that they would afford no proof at all that a bee is a more fully developed creature than a Tenthredo, or that a bee which makes waxen hexagonal cells furnished with honey has been developed out of a wasp which makes paper hexagonal cells furnished with animal food; or that a Bombus which makes individual egg-shaped waxen cells provisioned with honey must be regarded as the forerunner of the hexagonal cell-making honey-bee.

A memoir of considerable extent on the markings of caterpillars at different stages of their growth (that is, after successive changes of the skin) appears as the chief article in the second

* Throughout the article the leaf-cutting Hymenoptera are ignorantly miscalled leaf-cutting wasps.

volume of Dr. August Weismann's 'Studien zur Descendenz Theorie,' Leipzig, 1876, large 8vo, with five coloured plates; the first division of the memoir being entitled "Ontogenese und Morphologie der Sphingiden-Zeichnung," and the second division "Ueber den Phyletischen parallelismus bei metamorphischen arten." The first four plates illustrate the variations in the colours and marks of the larvæ of the Sphingidæ, and the fifth those of Saturnia Carpini, one or more segments of the body in different specimens and varieties being represented: 225 pages of small print are occupied in the discussion of this subject, to which, as appears to me, far too much importance has been attached.

Every fact, however, bearing on this curious question deserves to be carefully investigated, even if it extend no further than the darker or lighter colour of certain broods of insects. In this country Lycæna Artaxerxes offers a curious instance of this subject.

It is, moreover, well known that in certain localities, especially in the northern parts of England and Scotland, certain pale-coloured moths assume a darker coloration, and thus, as we learn from an article on "Melanism," by Mr. Edwin Birchall, F.L.S. (Entom. M. Mag., November, 1876, p. 131), near Leeds, Aplecta nebulosa and Xylophasia polyodon are often perfectly black, and the "black pepper" (*Biston betularia*, var.) is well known, although, as described by the late R. S. Edleston in 'Newman's Entomologist' (ii. p. 150) sixteen years previously, it was almost unknown near Manchester. The dark variety had, however, so much increased subsequently that he considered the original pale type of the species would soon be extinct in the locality. Mr. Birchall speculates (*sensu* Darwiniano) on the causes of the melanism, and gives a list of the species of moths of which melanic varieties occur in the northern and western parts of the British Islands. The subject has been, however, carried much further by Dr. F. Buchanan White (Ent. M. Mag., December, 1876) by whom the 430 (or thereabouts) species of Macro-Lepidoptera inhabiting Scotland are subjected to an analysis in this point of view; the majority appearing not to exhibit any decided variation. Certain species, however, offer variation in any locality. The remaining species are thus divided:—

A. Melanochroic species.

1. Melanochroic races (amongst which it is remarkable that the extreme northern form of Aplecta occulta is pale).

2. Species frequently Melanochroic, but often not so.

B. Leucochroic species.

1. Species of which all or a majority of the individuals are paler than in the South.

2. Species frequently paler, but not invariably so.

Like Mr. Birchall, Dr. White believes that "natural selection" is the chief cause of this variation, although meteorological influences may have led to the first production of the melanochroism.

The permanently dimorphic condition of various insects has been long known. Vanessa prorsa and levana, Lycæna amyntula and polysperchon, and Anthocharis belia and ausonia, have been satisfactorily determined to be respectively the summer and winter forms of three species. Dr. Weismann entered into and extended this subject amongst the Pierides in his 'Studien zur descendenz Theorie' (vol. i.), and we have recently received an account of a series of experiments on Papilio Ajax and its supposed allied species, Walshii, Marcellus, and Telamonides, by Mr. W. H. Edwards, which appears to confirm Dr. Weismann's views that the cold of winter modifies the broods produced in the autumn, developing markings which have been regarded as characteristic of distinct species.

A curious instance of the modification of specific characters in a species occurring in an American locust—Tragocephala Virginiana, *Fabr.*, (Gryllus, *v.*) viridifasciatus, *De Geer*, and Locusta infuscata, *Harris*—is given by Mr. S. H. Scudder (Proc. Boston Soc. xvii. p. 481), in which, in addition to permanent variations of colour in the specimens from New England, Texas, and Florida, variations are tabulated in the antennæ, fastigium of the vertex, pale spots in the tegmina of the males, and cloudiness of the wings.

A memoir with figures on the "mimicry" exhibited by the species of the genus Leptalis as compared with other Pieridæ, by Fritz Müller, appears in the 'Jenaische Zeitschrift für Naturwissenschaft,' 10th Band, neue folge, 3rd Band., Heft 1, 1876.

## Geographical Distribution.

The geographical distribution of insects is a subject which is attracting increased attention, and to which additional interest is attached since the publication of Mr. A. R. Wallace's work, 'The Geographical Distribution of Animals, with a Study of the

Relations of Living and Extinct Faunas as elucidating the Past Changes of the Earth's Surface,' two vols., 8vo, London, 1876.

The distribution of the earth into primary geographical regions, proposed by Mr. Sclater, has been partially adopted—(1) the Palæarctic, comprising the whole of Europe, North Africa, and the whole of Asia, except the Indian and Siamese Peninsulas; (2) the Nearctic Region, comprising the whole of North America, except Mexico and the Nicaraguan Isthmus; (3) the Neotropical Region, or the whole of South America, and with Mexico and the Isthmus of Nicaragua; (4) the Ethiopic, or the whole of Africa (except the northern part) and Arabia; (5) the Oriental Region, comprising India, Burmah, Siam, Sumatra, Java, Borneo, and the adjacent islands; and (6) the Australian Region, comprising New Holland, New Zealand, and the other islands east of Borneo.

The causes regulating the geographical distribution of animals, fossil and recent, are discussed, and the animals characteristic of each of these regions are rapidly passed under review, the greater part of the second volume being occupied by a systematic sketch of the chief families of land animals in their geographical relations. In this part of the work insects occupy only thirty-four pages, being devoted to the distribution of the genera of Diurnal Lepidoptera (comprising nearly 8000 species), and a few of the families of beetles.

The Distribution of Insects in New Hampshire (forming a chapter from the first volume of the Report upon the Geology of that State), by S. H. Scudder, affords much material for study. Probably no State in the Union presents so striking a variety in animal life as New Hampshire, its northern and southern portions belonging to distinct Continental forms, part resembling the productions of Labrador and Greenhill, whilst at a difference of only sixty miles animals flourish characteristic of sub-tropical climates. A considerable portion of the memoir is occupied with the distribution of the different species of butterflies, and a portion with the different Orthoptera, the habits of the species of this order being given in great detail, together with the musical notes of each species.

The butterflies and Orthoptera collected by Mr. Dawson along the boundary line between British America and the United States, have also been described by Mr. Scudder.

A few notes on the insects of Kerguelen's Land, by H. N. Moseley, M.A., naturalist to H.M.S. 'Challenger,' are published in the 'Journal of the Linnean Society' (Zool. vol. xii. p. 578).

### Fossil Entomology.

In the 'Memoirs of the American Association for the Advancement of Science' (vol. i.), a very elaborate treatise is published by Mr. S. H. Scudder on fossil Lepidopterous insects, nine species of which are described and figured in detail, and various additional fossils are described which have been regarded as Lepidopterous, including the Palæontina oolitica, which, from a careful examination of the original specimen and its cast in the Jermyn Street Museum, he has determined not to belong to the Lepidoptera, but most probably to the Cicadæ. Mr. Scudder has also published a short notice on the fossil Orthoptera of the Rocky Mountain Tertiaries; also on the fossil Coleoptera of the same stratum (of which he describes thirty-one species). Also the description of the fossil abdomen of a larva dragonfly from the Carboniferous Slate from Cape Breton; and also the descriptions of several fossil species of Thripsidæ from the North American Tertiaries, including two new genera, Lithadothrips and Palæothrips. Also a note on the fossil insects of Cape Breton (Proc. Boston Soc. N. H., vol. xviii. p. 113).

In the 'Memoirs of the Boston Society of Natural History' (vol. ii., part 2, No. 3), Mr. S. H. Scudder has also published an article on the carboniferous myriapods preserved in the Sigillarian stumps of Nova Scotia.

Notices of a fossil species of scorpion in the British coal-measures, also of some new macrurous Crustacea from the Kimmeridge-clay and from Boulogne-sur-Mer, and of a new fossil crab from New Zealand have been communicated to the Geological Society of London by Mr. H. Woodward, who has also described an extremely interesting fossil insect from the coal-measures of Scotland in the Quart. Journ. Geol. Soc. Lond. 1876 (vol. xxxii., p. 60, pl. ix.), belonging, as it would appear, to the family Mantidæ, under the name of Lothomantis carbonarius, and which agrees, in the remarkable development of the prothoracic lobes, with the African Blepharis domina, and which also seems to have a near relationship with the singular fossil named Eugereon Boeckingii, by Dr. Anton Dohrn. Mr. Woodward has added a list of all

the known Palæozoic fossil forms with which he was acquainted; to which Mr. Scudder has made a very important addition in his communication to the 'Geological Magazine' for November, 1876, in which a list is given of the Orthopterous, Neuropterous, Arachnidous, and Myriapodous fossil American insects from the Carboniferous formation, with reference to the works in which they have been described.

Professor Oswald Heer has also, in the same paper, supplemented Mr. Woodward's list by noticing four species of fossil Blattidæ previously recorded by him in the 'Viertelzahreschrift d. Tühner Natur Gesellsch,' 1864.

A new species of fossil Cypris (*Palæocypris Edwardsii*) has been described by M. Ch. Brongniart in the 'Geological Magazine' for January, 1877.

### Anatomy, Physiology, and Metamorphosis.

Space will not allow me to do more than shortly allude to the continuation of Sir John Lubbock's very elaborate series of experiments with ants, bees, and wasps, published in the 'Proceedings of the Linnean Society' (Zool. vol. xii. p. 415), with a view to ascertain the amount of intelligence and the means of communication which these insects possess amongst themselves. By carefully marking certain individuals, and then submitting them to various tests of a curious character, the author appears to have arrived at a conclusion contrary to the generally-received opinion as to their intellectual powers. His observations have been further directed to the provident habits of ants, the division of labour, their affection and behaviour to their wounded brethren, their recognition of friends, their senses of smell and hearing, their sentiments of benevolence; also to the appreciation of colour by bees and wasps, and the capacity for work of wasps, their power of distinguishing colours, and on the direction of the flight of bees.

The stridulation of certain insects, and the mechanical contrivances by which it is effected, has long attracted the attention of entomological anatomists, especially in the Cicadæ and crickets. It has also been observed in some species of butterflies. The 'Transactions' of our Society (new ser., vol. ii., p. xcviii.), contain a notice by the Rev. Joseph Greene on the production of a faint hissing sound made by a peacock butterfly (*Vanessa Io*),

the wings of which were simultaneously depressed and elevated. This was confirmed by Mr. Hewitson in vol. iv. Proc. p. ii.

In the 'Entomologist's Monthly Magazine' for January, 1877, is a paper by Mr. Swinton detailing the structure of the basal portion of the wings and the serrated structure of the anal vein of the fore wing, and the smooth raised surface of the costal vein of the hind wings. Figures of these structures, by which the sound is produced when they are rubbed together, are added. The author seems to have overlooked the curious notice of the production of a similar sound in the butterflies of the genus Ageronia observed by Mr. Darwin (see Gen. Diurn. Lep. i. p. 82).

Mr. Wood-Mason has made us acquainted with a curious instance of stridulation observed by himself in an Indian spider (Annals Nat. Hist., Jan. 1876).

An elaborate memoir on a very delicate portion of the internal anatomy of lepidopterous insects first noticed by Newport, has been published in Hofmann's 'Niederlandisches Archiv. für Zoologie' (Bd. iii., Heft 2, 1876), with the title "Ueber das sogenannte Bauchgefäss der Lepidoptera nebst einigen Beobachtungen uber das sympathische nervensystem dieser insectenordnung," specimens of all the different tribes of Lepidoptera from the Papilionidæ to the Pterophoridæ having been carefully dissected and described.

A memoir of the internal spinning apparatus of Lepidopterous insects, by Helm, has been published in Siebold and Kolliker's 'Zeitschrift' (vol. xxvi. Heft 4).

A remarkable memoir by Dr. O. J. B. Wolff appears in the 'Nova Acta Acad. Natur. Curios.,' vol. 38, Dresden, 1876, 4to, with eight plates, in which the author has investigated the minute anatomy of various portions of the structure of bees (*Apis*, *Prosopis*, and *Hylæus*), especially with reference to the mechanism of the mouth-organs and respiratory organs of the thorax and abdomen. The author does not appear to have been acquainted with the description and figures which I gave of the progressive action of the parts of the month in Anthophora in my 'Introduction,' from a state of quiescence to the full extension of the sucking apparatus, which is, I think, better shown in that insect than in any other of the bees.

A memoir on the "Metamorphoses of Tipula oleracea and Musca carnaria," by Mr. A. Hammond is reported in the 'Journal of the Quekett Club' for May last.

An anatomical memoir on the structure of the eyes of Dipterous insects has been communicated to the Academy of Bologna by M. G. V. Ciaccio (Rendiconto, p. 99), of which a translation of the summary appears in the 'Journal de Zoologie,' of M. Paul Gervais (Tom. v. No. 4).

An article on the digestive apparatus in insects, by M. Jousset, is noticed in 'The Academy' of the 12th February last.

A memoir upon the Blastoderms of spiders, by Herr Ludwig, appears in Siebold and Kolliker's 'Zeitschrift' (Bd. xxvi. Heft 4).

A paper upon the structure of the palpi of male spiders, by J. H. Emerton, appears in the Proc. Boston Soc. xvii. p. 505.

In 'Nature,' November 2, 1876, is the account of an experiment upon the caterpillars of Pieris Brassicæ at the time of their assuming the pupa state, by J. A. Osborne. Of nine of these caterpillars he cut through the silken girdle they had spun, thus bringing them to the condition of the Suspensi: of these three managed to secure hold of the caterpillar skin until they had fastened themselves by their anal hooks to the silk to which the anal feet of the larvæ had been attached; the others fell to the ground for want of the suspensory girdle.

M. Balbiani has continued his curious researches on the eggs of the Phylloxera and their development, quoted in the 'Comptes Rendus' for 20th and 27th November last.

A memoir on the gynandromorphism of the Lepidoptera, with especial description of two specimens of Saturnia (*Callosoma*) Promethea, partly male and partly female, is given by A. S. Packard, jun., M.D., in the Memoirs of the Boston Society of Natural History (vol. ii. pl. iv. No. 111). In one of these insects the right side of the body and antennæ are male, the right wings partly male and partly female, and the left side of the body and wings are male. In the other specimen the right half of the insect is male and left half female.

The last part of the 'Verhandlungen' of the Natural History Society of Prussian Rhine district (Corresp. Bl., p. 93), is a notice by D. v. Hagen on Hymenopterous gynandromorphic specimens occurring in Prosopis obscurata, *Schenck*, Nomada glabella, *Thomson*, Sphecodes reticulatus, *Th.*, Andrena fuscipes, Ponera androgyna (*Thorell*, Switzerland). Reference is made to others described in the Berlin Ent. Zeitschr. for 1873, and the Stettiner Ent. Zeitsch. for 1861.

The existence of monstrous specimens of Lepidopterous insects in which the head case of the caterpillar is retained in the butterfly state has long been known, the first instance on record being the Phalæna heteroclita of Müller, represented in the Memoirs of the French Academy. Professor Wesmael subsequently published an account and figure of a similar monstrosity in Nymphalis Populi, and Dr. Hagen has supplemented these by a beautiful figure of Morpho Eurylochus, still retaining the head of the larva. Numerous other instances are recorded by Dr. Hagen in his paper on these monsters in the Memoirs of the Museum of Comparative Zoology at Harvard Coll. Mass. (vol. ii. No. 9).

A short article on the partially retarded development of specimens of both sexes of Anisopteryx vernata and pometaria is given by B. P. Mann in Proc. Boston S. N. H. xviii. 201.

The interesting peculiarities exhibited in the development of the Crustacea from the egg to the perfect state continue to attract much attention. A memoir on this subject by Mr. Spence Bate, containing descriptions of the larvæ of thirty-eight genera of Podophthalmous Crustacea, has been presented to the Royal Society. The memoir of Dr. Claus on this subject has been noticed above.

A memoir by F. W. Putnam on the habits of the blind crayfish, and the reproduction of lost parts, is published in Proc. Boston Soc. N. H. xviii. p. 16.

M. Hesse has continued his memoirs on the rare and new Crustacea from the coasts of France in the 'Annales des Sciences Naturelles' (vol. iii. of the sixth series of the zoological part of that work), containing a memoir on the development of the larvæ of the Paguridæ, and vol. iv. Ser. vi. (47th year) comprising "Nouvelles Observations sur les Métamorphoses embryonnaires des Crustacés de l'ordre des Isopodes sédentaires," and descriptions of two new species of the parasitic genera, Athelgus and Pleurocryptus, belonging to the family Bopyridæ. The plates accompanying this memoir are in the usual style of the author's designs.

A memoir on the habits of the hermit crabs, by M. Agassiz, has also been quoted (Ann. Nat. Hist., Jan. 1876).

A very important memoir "On the Development of Lepas fascicularis and the Archizœa of Cirripedia," by the late Dr.

Rudolf von Willemöes-Suhm,* naturalist to the 'Challenger' Expedition (by whom a very interesting paper containing new forms of Crustacea was presented to the Linnean Society in the preceding year), appears in the 'Philosophical Transactions' of the Royal Society of London for the year 1876. The discovery that in Lepas the larvæ pass through a Cypris state was made by Burmeister. He, however, missed the intermediate stages, and Claus discovered and illustrated the final metamorphosis into the fixed barnacle. The author was fortunate in being able to trace all the stages of the transformations of this wonderful creature during the voyage of the 'Challenger,'—that which occurs from the final Nauplius form, with six gigantic spines (which = the Archizœa of Dohrn) to the free-swimming spineless Cypris form, and thus to the sedentary fixed condition of a small barnacle, are not surpassed by the most remarkable instances of transformations in the Annulosa.

## Descriptive Entomology.

This branch of the Science has, as usual, attracted the especial attention of the greater number of entomological students. To so great an extent has this been carried that it would be impossible for me, in the limits of this Address, even to give a list of the various memoirs and shorter articles which have appeared in the different Transactions, Annals, and Magazines devoted to Natural History in general, or to Entomology in particular. This would also be comparatively useless labour, as the publication of the 'Zoological Record' annually brings us a condensed summary of these additions to our knowledge. I must, however, allude to some of these memoirs of a more important character, either from their containing valuable anatomical or other information not contained in more technically descriptive papers.

In our own country Messrs. Rye and Sharp have added various new species to our lists of British Coleoptera.

In Hymenoptera, Messrs. Cameron and Marshall have done the same, the former having especially devoted his attention to the Tenthredinidæ and Cynipidæ, as the latter has to the Ichneumonidæ.

* Dr. Willemöes-Suhm died on the 13th of September, 1875, in his twenty-ninth year. He had previously to the 'Challenger' Expedition been "privat-docent" in the University of Munich, under Professor von Siebold.

The Trustees of the British Museum have issued a second, much improved, edition of Mr. F. Smith's excellent monograph of the English bees.

Synoptical Catalogues, in a too condensed form, of the Scotch Coleoptera by Messrs. Blackburn and D. Sharp, and of the Scotch Lepidoptera by Dr. F. Buchanan White, have been continued in the 'Scottish Naturalist' for the past year.

In English Lepidoptera the additions have been chiefly confined to the description of the larvæ of previously known species, and for which we are indebted to Messrs. W. Buckler, G. T. Porritt, C. Fenn and the Rev. J. Hellins. We can but regret to see so little new on the Micro-Lepidoptera from Mr. Stainton's pen.

In the Suctorial Hemiptera of Linnæus our Society has done good service by the recent publication of the Catalogues of British Heteroptera and Homoptera, and by the excellent 'Synopsis of British Species of Heteroptera,' by Mr. Edward Saunders, in our 'Transactions.' Messrs. Scott and Douglas have continued their additions to the species of these groups (especially the Homoptera), in the pages of the 'Entomologist's Monthly Magazine,' and the excellent monograph on British Psyllidæ in our Transactions.

Mr. Buckton's monograph on the Aphidæ will be noticed below.

In British Diptera we are indebted to Mr. Verrall for articles on the interesting family Dolichopidæ, and to Mr. Meade for a memoir on the difficult genus Sarcophaga, both published in the 'Entomologist's Monthly Magazine.'

A separate work entitled 'Sketches of British Insects,' by the Rev. W. Houghton, has appeared.

The members of the Society are probably aware that the Trustees of the Collection of British Lepidoptera of the late Henry Doubleday have placed it in the Bethnal Green Museum. A memorial with reference to its exhibition and preservation having been presented by the Haggerston, the East London, the South London, and the West London Entomological Societies, elicited a reply from the Director of the South Kensington Museum (of which that of Bethnal Green is a branch), in which it is stated that a room will be specially provided and an attendant will be in readiness to show the collection to such persons as may apply to the officer in charge for permission to inspect it. In a further communication from the Director of the South Kensington

Museum, it is stated that arrangements have been made for the Doubleday Collection to be open for inspection until 9.30 P.M. on Tuesdays; on other days it is open from 10 A.M. till 5 P.M.

A short notice of the insects collected by Captain Feilden during the late Arctic Expedition, so far as they have hitherto been unpacked, has been given by Mr. M'Lachlan in the 'Entomologist's Monthly Magazine' for January, 1877, including "five or six butterflies, within a few hundred miles of the North Pole"—a curious circumstance when it is taken into consideration that Iceland and the large islands of the Spitzbergen group, although in lower latitudes, have apparently no butterflies. The species collected belong to the genera Colias, Argynnis (or Melitæa), Chrysophanus, Acronycta, Amphidasis, Cheimatobia, Phycis, Bombus, Ichneumon, Tachina, Tipula?, Culex, Simulium, and various bird-lice.

In South America, in addition to the excellent work done and doing at the Public Museum of Buenos Ayres by our friend Dr. Burmeister, we are glad to announce the establishment of an "Academia Nacional de Ciencias exactas" in the University of Cordova, the capital of the Argentine Republic, and the publication of the first volume of its 'Acta' in a handsome 4to form.

An unexpected instance of the extended cultivation of Entomology occurs in the last September number of the modern Greek periodical entitled 'Βυρων' (Τομος Β, Φυλλαδιον 21), in which seven quarto pages are devoted to the subject, the Μερος Τριτον, relating to the general characters and modes of collecting and preserving insects with hard wing-covers, the Μερος Τεταρτον, to the clear-winged insects, "Θηρα Εντομων Εξοντων Πτερυγας Διαφανεις." The article is illustrated with wood-cuts showing the modes of pinning and setting insects; and it is to be noticed that the Greek collectors prefer to set their Lepidoptera with their wings gradually elevated to the tip, just contrary to our English fashion of pinning them with the tips resting on the paper of the drawers—a plan which is clearly objectionable, as it damages the cilia and offers great facilities to mites to eat it off.

From the Antipodes we have also evidence of an extended love for the cultivation of our subject. The establishment of the "Linnean Society of New South Wales" is especially worthy of notice. The second and third parts of the 'Proceedings' of that body contain memoirs on the Araneides of the Chevers

Expedition to New Guinea and the adjacent islands, by Mr. H. H. B. Bradley, and a short memoir by Mr. W. MacLeay on the Geodephagous Coleoptera of the same Expedition.

In the 'Report of the Proceedings of the Wellington (New Zealand) Philosophical Society,' on the 18th of last October, the President of the Society, Dr. Buller, C.M.G., read a paper on "Insect Architecture; or, Notes on the Spider-Wasp of New Zealand"—"a species of spider-wasp (*Pompilus*), commonly called the 'mason-bee,' the nest of which consists of a double row of cells composed of clay and very neatly finished, each compartment being completely shut off from the adjoining one, and permanently sealed, when filled with spiders, in the bodies of which the wasp deposits her eggs." In the discussion which took place after the reading of the paper seven of the members took part.

The insects of New Zealand are at length beginning to attract the attention of English entomologists, as it is evident from recent discoveries that their numbers (formerly supposed to be but small) are much greater than had been believed. We are indebted to Mr. Miers, of the British Museum, for a valuable memoir on the Crustacea of New Zealand, published by the Colonial Museum and Geological Survey Department, with three plates.

In the 'Transactions of the New Zealand Institute' for 1875 (vol. viii., May, 1876) we find the following memoirs:—

"On the Habits of a Trap-door Spider," by R. Gillies (pp. 222 to 262). This is a very elaborate paper on an apparently new species, and is a careful supplement to Mr. Moggridge's work.

"Notes on the Coleoptera of Auckland, N. Z.," by Captain Brown (pp. 262 to 271).

"Remarks on the Pselaphidæ of New Zealand," by Captain Brown (pp. 271 to 282), containing descriptions of fifteen new species, and two new genera, Dalma and Sagola, the latter described by Dr. Sharp.

"Description of a new Genus and Species of Heteromera, New Zealand," by Frederick Bates, F.L.S. Reprinted from the 'Annals of Natural History.'

"Description of a Species belonging to the family Satyridæ," by R. W. Fereday, figured under the name of Oreina? Othello

(Pluto *olim*) ; and in the ' Entomologist's Monthly Magazine ' for December, 1876, Mr. Butler has given the scanty list of the New Zealand butterflies (fourteen in number*), including a new species,—Chrysophanus Enysii,—allied to C. Salustus. Memoirs containing descriptions of new species of New Zealand Coleoptera have been published in the ' Entomologist's Monthly Magazine ' for the past year (vol. xii.), by Messrs. H. W. Bates and D. Sharp ; and by Mr. Pascoe in the ' Annals of Natural History ' during the past year. Various new species of Hymenoptera from New Zealand have also been described by Mr. F. Smith in the ' Transactions ' of our Society.

In India excellent work is being done at the Museum of Calcutta by our friend Mr. Wood-Mason, who appears to have devoted much of his attention to the Orthoptera and larger Crustacea. His various memoirs on these subjects have been reprinted in the ' Annals of Natural History.'

We must congratulate our brother workers in North America on the many admirable works which they have recently published, of most of which notices will be found below. The names of John Leconte, Horne, Packard, Scudder, Edwards, Strecker, Grote, and various other entomologists, including Dr. Hagen and Baron Osten-Sacken, may be well placed side by side with the most celebrated European entomologists.

### Crustacea.

The memoirs of Claus and Spence Bate, on the zoea or larva state of various genera of Decapod and Stomapod Crustacea, have been referred to above. A memoir on various new species of Oxystomatous Crustacea, by Edward J. Miers, F.L.S., of the British Museum, has been communicated to the Linnean Society. The ' Transactions of the Connecticut Academy of Arts and Sciences,' vol. iii., part I., 1876, contains a Report on the dredgings in the region of St. George's Banks, in which a number of Crustacea were taken, but only one new species is described—Stenothoe peltata, *Smith*, pl. IV., figs. 5 to 8. A memoir on the curious crustaceous genus Æglea, with the description of a new species by Fritz Müller, appears in the Jena Zeitschr. f.

* Mr. Wallace devotes several pages in his work on the geographical distribution of animals (i. p. 462), endeavouring to account for this rarity of insects in New Zealand.

Natur Wissensch., 10th Band, 1876. The Rev. T. R. Stebbing has continued his researches on the small Amphipodous Crustacea of our Southern Coast, and has published several illustrated papers on different species in the 'Annals of Natural History.'

An account of the Crustacea inhabiting the Lake Titicaca, in Peru, by Walter Faxon, appears in the Bulletin of the Museum of Comparative Zoology of Harvard College, Cambridge, Mass., vol. iii. The Crustacea (with the exception of a single species of Cypris) belong to the curious Amphipodous genus Allorchestes, and are remarkable for the abnormally developed epimera and tergal spines; some of them are also noteworthy as comparatively deep-water forms of a family commonly regarded as pre-eminently littoral; woodcuts are given of all these curious species.

A memoir on the terrestrial Isopoda of Austria, with two plates, by Herr Vogl, has appeared in the 'Verhandlungen' of Vienna.

An elaborate memoir on the internal anatomy of Branchipus stagnalis, with three plates, is published by F. Spangenberg in von Siebold and Kolliker's 'Zeitschrift (25 vol. Suppl.), which also contains a memoir by Dr. H. Nitsche on the sexual organs of Branchipus Grubei of von Dybowsky, with a plate. The memoir of Herr Schmankewitsch on the Branchipides, in the same volume, is noticed above.

The 'Journal des Museum Godeffroy' (Heft xii. 41, 1876), contains the description and numerous figures of a new species of Branchipus from Peak Downs, Australia, 300 miles inland, by Dr. Richters, of Altona (*B. Australiensis*).

The Niederlandisches Archiv. für Zoologie, of Hofmann (vol. iii.) introduces us to a new worker amongst the minute Crustacea, Dr. P. P. C. Hoek, assistant in the "Zootomisches Laboratoriums," of Leyden, having published a memoir on the "Susswasser-Copepoden" of the Netherlands Fauna, with three elaborate plates of details relating to the genera Cyclops and Temora; likewise a memoir on the embryology of the Balanidæ, with two plates.

A memoir of Herr Claus on the minute anatomy of the Daphniidæ is published in Siebold and Kolliker's 'Zeitschrift, vol. 27, Heft iii.

## Arachnida.

The Swedish naturalist, Thorell, has continued his excellent labours on the European spiders, and has, moreover, given us a new classification of the scorpions (see Ann. Nat. Hist., Jan. 1876). He has also published an article on some spiders of Labrador (Proceedings Boston Soc. N. H. xvii. p. 490).

The various articles published on the spiders of North America in the Natural History periodicals of that country by the late N. M. Hentz have been collected into a volume by the Boston Society of Natural History, edited by E. Burgess, with notes by J. H. Emerton (Occas. Papers, ii.).

A second memoir on the Arachnida Territelariæ (Mygalidæ), with three plates, by Dr. Ausserer, has appeared in the twenty-fifth volume of the Vienna 'Verhandlungen.'

The memoir of Mr. R. Gillies on the trap-door spider of New Zealand is referred to above (p. 22).

The Rev. O. P. Cambridge has communicated a memoir on a new order and some new genera of Arachnida from Kerguelen's Land, with a plate, to the 'Proceedings of the Zoological Society,' 1876, p. 258. Also a catalogue of a collection of spiders made in Egypt, with descriptions of a new species of a new genus (*Ibid.*, p. 541).

An elaborate memoir by Dr. Anton Specker, of Prague, upon the anatomical and histiological characters of Gibocellium, a new genus of Opilionideous Arthrogastra allied to the interesting genera Cyphophthalmus and Stylocellus, *Westw.*, illustrated by four plates, has appeared in Troschel's 'Archives' (forty-second year, 3rd Heft, p. 293, 1876, 4to). The type of the new genus is named G. sudeticum, from the Bohemian Mountains.

In Troschel's 'Archives' (forty-first year, Heft 1) Herr Kramer has published two memoirs on the mites of the family Gamasidæ. A memoir on the same family, by M. Megnin, appears in the 'Comptes Rendus' of 20th November last. A curious new genus of Acaridæ, named Dendroptus, with two species, is described by Dr. Kramer in Troschel's Archiv. f. Naturg. (forty-second year, 2nd Heft). An anatomical memoir on the Acaridæ, together with descriptions of some new genera of the family Gamasidæ, is given by Dr. P. Kramer in Troschel's Archiv. f. Naturg. (forty-second year, 1st Heft).

INSECTA.—COLEOPTERA.

A revision of the North-American Coleoptera formerly described by Mr. Randall has been published by Messrs. Sprague and Austin (Proc. Boston Soc. N. H. xvii. 387).

Descriptions of various new species of exotic Coleoptera, by Charles O. Waterhouse (including an account of those collected in the Island of Rodriguez by the naturalists accompanying the Transit of Venus Expedition), appear in the 'Transactions' of the Society and the 'Annals of Natural History.'

Baron Chaudoir has continued his labours on the Carabidæ, having published memoirs on the Cymindides and Siagonides in the recently received parts of the Moscow Bulletin.

Various new species of Japanese Geodephagous Coleoptera are described by Mr. H. W. Bates in our 'Transactions.'

An elaborate memoir on the Staphylinidæ of the Amazon Valley, as well as others from Mexico and Central America, by D. Sharp, M.B., has been published in the 'Transactions' of our Society.

The 'Journal des Museum Godeffroy' (Heft xii. p. 48) contains a memoir by Herr C. A. Dohrn on the Australian species of Paussidæ belonging to the difficult genus Arthropterus, of which a considerable number of new species have been lately described by Mr. McLeay, jun.

Two new African species of Paussidæ have also been described by Herr Ritsema, Paussus Woerdeni and Pleuropterus Dohrnii.

The Baron von Harold has published the descriptions of some new species of Coprides, including a new genus, Pinacotarsus, from Monrovia, in the Entom. Zeit. of Stettin, xxxvi. p. 452.

The Curculionidæ collected in the Islands of Cuba by Dr. Gundlach have been described by Dr. E. Suffrain in Troschel's Archiv. f. Naturg. (forty-second year, 2nd Heft).

A memoir by M. Ed. Lefèvre, containing a large number of new genera and species of Eumolpides, chiefly from South America, appears in the Revue et Mag. de Zoologie, for 1876 (p. 278 to 311).

Mr. Baly has continued his apparently interminable task of describing the exotic species of Phytophaga in the pages of the 'Entomologist's Monthly Magazine,' and in the 'Transactions' of our Society.

## Hymenoptera.

The Tenthredinidæ and Cynipidæ of Scotland have received much attention from Mr. P. Cameron, of Glasgow, who has added "a number" of new species to the British lists, including monographs of the obscure and perplexing species of the genera Fenusa and Cladius (Entom. Mo. Mag., Jan. 1876, and 'Scottish Naturalist,' vol. iv. p. 11). In the second volume of the 'Transactions of the Glasgow Society of Field Naturalists' are also interesting and valuable papers on the gall-makers of the Glasgow district, by Mr. Cameron. Various new species of Tenthredinidæ and Siricidæ (chiefly Indian) have also been described by Mr. P. Cameron in our 'Transactions.'

Mr. Trail has continued his descriptions of Scottish galls, commenced in the first and second volumes of the 'Scottish Naturalist,' in the fifth volume of the same work, describing the galls (whether made by Cynipidæ or dipterous parasites) upon various species of plants which have been observed to be affected by them.

The fourth volume of C. G. Thomson's 'Scandinavian Hymenoptera,' Lund., 8vo, 192 pp., is devoted to the family Chalcididæ, the sub-families Pteromalides and Eulophides being reserved for a future volume.

An elaborate monograph on the Encyrtides of Europe, by Dr. G. Mayr, extending to 100 pages, has appeared in the 25th volume of the Vienna Verhandlungen Zool. Bot. Gesellsch.

Dr. Snellen van Vollenhoven has commenced the publication of an elaborate work upon the Linnean Ichneumons of the northern part of Europe, in which he proposes to give figures of not fewer than 1000 species, under the name of 'Pinacographia.' Four parts have already appeared.

Dr. Snellen van Vollenhoven has also continued his memoirs on the history and transformations of the Netherlands' Tenthredinidæ in the 'Tijdschrift voor Entomologie,' in which he has also given a complete list of the Tenthredinidæ and Ichneumonidæ, and allied families, inhabiting the Netherlands.

Herr Ritsema has published a memoir on eight new Indian species of Xylocopa in the 'Tijdschrift voor Entomologie.'

An elaborate memoir, extending to sixty pages, 4to, on the

ants of Australia in the Godeffroy Museum at Hamburg, by Dr. Gustav Mayr, appears in the 'Journal' of that Museum, vol. xii. p. 56, containing fifty entirely new, in addition to the numerous species previously described by Smith, Lowne, Mayr, and other earlier writers.

### Orthoptera.

In the 'Ofversigt af Kongl. Vetensk. Akad. förhandlingar' of Stockholm, for 1876, we find an extended memoir by Herr C. Stål, entitled "Bidrag till Södra Afrika's Orthopter fauna." With the single exception of a new species of Maxentius from the neighbourhood of the Cape of Good Hope, the whole of the species described in this memoir, of nearly fifty pages, are from Damara Land and Ovambo, and belonging to all the great divisions of the order.

Mr. S. H. Scudder has continued his contributions to the knowledge of the Orthoptera in the 'Memoirs' and 'Proceedings' of the Natural History Society of Boston, U. S. Four decades of his "Century of New Forms" have recently appeared, the last (sixth) decade being entitled "Critical and Historical Notes on Forficulariæ," including descriptions of new generic forms, and an alphabetical synonymical list of the described species, which extends over fifty pages. He has also published, in the same work, "Notes on the Orthoptera of Northern Peru," with descriptions of forty-five species, including several new genera; and "Spharagemon," a genus of Œdipodidæ, and its species; likewise a revision of Eneoptolophus and Tragocephala, two American genera of Œdipodidæ (Proc. Boston Soc. vol. xvii. p. 478).

### Neuroptera.

Dr. F. Brauer (who has, I believe, succeeded Dr. Redtenbacher as Director of the Entomological Museum of Vienna) has published a 'List of the European Neuroptera' (including those of Northern and Central Asia, Northern Africa, Syria, &c.), and comprising the whole of the species in the Linnean sense. The catalogue comprises about 1000 named species (but a number of these are evident synonyms), of these there are about 100 actual species of dragonflies.

A synopsis of the Odonata (*Libellulæ*) of America, by Dr. H. A. Hagen, is given in the 'Proceedings,' Boston Soc. N. H. (xviii. p. 20—96).

### Trichoptera.

The fifth part (together with a Supplement to part 1) of 'A Monographic Revision and Synopsis of the Trichoptera of the European Fauna,' with eight plates, by Robert M'Lachlan, F.L.S., has appeared and fully maintains the classical character of this important work—a genuine labour of love, the preparation of which, with the very numerous figures of anatomical details, must have required a very large amount of time and patience, the fragile nature of the Caddis-flies rendering them very difficult of manipulation.

Dr. Brauer has published the descriptions of some new species of Trichoptera in the twenty-fifth volume of the Vienna Verhandl. Zool. Bot. Gesellsch.

### Lepidoptera.

Lepidopterists who for the last twenty-five years have periodically welcomed the beautiful plates of Mr. Hewitson's 'Exotic Butterflies' will regret the termination of that work with the fifth volume. The entire work comprises 300 plates, containing 2113 figures, illustrating not fewer than 1167 new species, together with 65 which had been previously figured in an unsatisfactory manner. It is to be hoped that the author will be spared to complete his separate work on the Lycænidæ, as well as his plates of the "obscure Hesperidæ," to which he alludes in the preface of his completed work.

The work commenced by Messrs. Felder, which was temporarily suspended by the lamented death of the younger author, has been continued through the past year by the publication of an elaborate set of plates containing an almost infinite profusion of figures of Nocturnal Lepidoptera, admirably drawn and coloured. The text, it is to be regretted, is unfortunately confined to a mere catalogue of the names and localities of the species figured.

Descriptions of various new species of butterflies, and also of a remarkable new Attacus from Australia, have been published by Mr. Miskin in our 'Transactions.'

The beautiful work upon 'The Butterflies of North America,'

by W. H. Edwards, has reached the fifth part of the Second Series (New York, 4to. 1876), containing an extensive series of illustrations of Colias Philodice, Argynnis inornata and rupestris, and Apatura Clyton and Proserpina, the synonym of which latter is cleared up by a communication which I was enabled to make to him of copies of Mr. Jones' original figures, from which Fabricius drew his descriptions.

Mr. Herman Strecker continues with unwearied zeal (considering the difficulties of his position) his excellent 'Lepidoptera Rhopaloceres and Heteroceres,' the last part (No. 13) being devoted to the illustration of a number of difficult American species of Sphingidæ, admirably lithographed by the author, who has, in his usual style, seasoned his text with some sharp critiques of some of the Lepidopterous writers of the United States.

Dr. Rogenhofer has published, in the twenty-fifth volume of the 'Verhandlungen' of the Vienna Zool. Bot. Soc., a series of descriptions of the larvæ of various butterflies and other Lepidopterous insects of Austria.

The Lepidoptera of Patagonia form the subject of a memoir by Dr. Prof. C. Berg in the first volume of the 'Acta' of the Academy of Cordova, published at Buenos Ayres, and simultaneously in the Moscow 'Bulletin' for 1876 (p. 191). Amongst the Diurna one new species is described, Pieris Achamantis, near Ilaire and Mœneste.

In the first volume of the fourth series of the Lille 'Memoires,' we find a "Catalogue des Lépidoptères du Département du Nord, par M. G. Le Roi" (omitting, however, all the Micro-Lepidoptera), extending to sixty pages.

Mr. Butler has contributed numerous papers on different families of Lepidoptera to the Linnean and Zoological Societies and to the different periodicals, amongst which may be especially mentioned "A Monograph of the Pierideous Genus Teracolus," comprising 129 species, with illustrations of twenty-eight species, published in the 'Proceedings of the Zoological Society' (1876, p. 126); also "Notes on a Small Collection of Butterflies from the New Hebrides" (*ibid.*, p. 251); also "Descriptions of a few Eastern Lepidoptera from the Collection of Lieut. H. Roberts" (*ibid.*, p. 308); also "Notes on Zygænidæ," in which he has corrected numerous errors of Mr. Walker and described numerous new species; and his memoir "On the Sub-

families Antichlorinæ and Charideinæ," both published in the 'Journal of the Linnean Society,' vol. xii.

Descriptions of new American species of Noctuidæ, by H. K. Morrison, appear in Proceedings Boston Soc. N. H., xviii. p. 114.

A valuable "List of the Butterflies of Peru, with Descriptions of New Species," by Mr. Herbert Druce, F.L.S., &c., appears in the 'Proceedings of the Zoological Society' (1876, p. 205), with two plates.

Descriptions of new Exotic Butterflies from various parts of the New World are given by Weymer, in the Entom. Zeit. of Stettin (xxxvi. p. 868).

A memoir by George Semper on the Philippine Species of the Pierideous Genus Tachyris appears in the Ent. Zeitung of Stettin (xxxvi. p. 393).

Mr. S. H. Scudder has published a 'Report on the Butterflies collected on the Yellowstone Expedition;' also "Remarks on the old Genus Callidryas," and "Descriptions of some Labradorean Butterflies," in the Proc. Boston Soc. (xvii.); and in his collected Entomological Notes, also "Notes on the Butterflies of Cape Breton Island (Proc. Boston Soc., xviii. p. 188), and an article on the small blue butterflies (*Polyommati*) of North America.

The curious Lepidopterous genus Eumeus, which I placed, in the 'Genera of Diurnal Lepidoptera,' at the head of the Lycænidæ has formed the subject of a memoir by Mr. S. H. Scudder, who has fortunately been able to obtain the larva and pupa (the former of which I had not seen), published in the 'Memoirs of the Boston Society of Natural History' (vol. ii., pt. iv., No. 2), with figures.

It will be sufficient for me, in this place, to notice the publication by Dr. Boisduval of the first volume of the "Species Général des Lépidoptères-Heterocères," containing the Sphingidæ, Zygænidæ, Castniæ, and allied groups.

Memoirs by Mr. Grote on the North-American Noctuæ are noticed in the 'Entomologische Zeitung' of Stettin (xxxvi., pp. 97, 131, 345).

We cannot sufficiently praise the admirable 'Monograph of the Geometrid Moths, or Phalænidæ, of the United States,' published by Mr. A. S. Packard, jun., M.D., at Washington, 1876, 4to, pp. 606, with thirteen plates (forming the tenth volume of Haydon's Report of the Geological Survey of the Territories). An excellent introduction, in which the Bibliographical history,

the various anatomical characters of the group, and the classificational details are given, is followed by careful descriptions of all the species, of which a great portion are represented in the elaborate plates, much care having been taken to ensure the identification of many of the species insufficiently described by Mr. Walker by carefully prepared drawings of the types in the British Museum, made at the expense of the author. Following in the steps of Herrich-Schäffer, great attention has been devoted to the arrangement of the wing-veins of the different species represented in the first seven plates of the work, the remaining six plates being occupied with the figures of the perfect insects, as crowded as possible.

The second part of the Micro-Lepidopterous portion of the work of H. von Heinemann and Wocke on the Lepidoptera of Germany and Switzerland has appeared (Brunswick, 1877, 8vo, 825 pp. and 102 pp. of tabulation of species).

Papers by Herr Ritsema and Mr. Dunning on the Genus Acentropus have appeared during the year.

A memoir on new Lepidoptera from South America (Tortricidæ), by Dr. Staudinger, has appeared in the 'Verhandlungen' of the Vienna Zool. & Bot. Society (vol. 25).

A memoir by P. C. T. Snellen on the Eastern species of Pyralidæ, forming the genus Oligostoma, is published in the 'Tijdschrift v. Entomologie.'

### Hemiptera.

An extended memoir on the Hemiptera-Heteroptera of the Astrakan district—written in Russian, with characters of new species in German(!) and fuller descriptions in Russian—appears in the 'Moscow Bulletin,' 1875, part 3, occupying thirty pages. The inconvenience of such a publication is very great, as, for instance, we find the habitat, Sarepta, printed in Roman type on one page, whilst in the opposite one it appears as "Capenta." Fourteen new species and several new genera are described.

The following part of the same 'Bulletin' contains a more extended memoir on the Russian Heteroptera, by the same author, with a plate.

Mr. Uhler has published a list of the Hemiptera of the region west of the Mississippi River.

We find in the 'Memoires of the Société des Sciences de Lille,'

4th ser., tome i., 1876, a second edition of a "Catalogue des Hémiptères du Département du Nord," par L. Lethierry (Heteroptera and Homoptera), extending to upwards of 100 pages.

Dr. Horváth has recently published a "Monograph of the Hungarian Species of Lygæidæ," at Budapest, 4to, 109 pages, with 1 plate, containing 100 species, of which three are described as new, and which are represented by coloured figures in the accompanying plate.

A memoir by Dr. Reuter, on the Hemiptera-Heteroptera of Austria, appears in the twenty-fifth volume of the Vienna Zool. and Bot., Gesellsch.

P. R. Uhler has published a list of the Hemiptera and Neuroptera from Northern Peru, in the Proceed. Boston S. N. H., xvii. p. 282.

A translation by Ferd. Rieber, of the memoir on the "Cicadinæ of Europe," by Herr Fieber, appears in the 'Revue et Magazin de Zoologie' for 1876, extending through many numbers.

We are indebted to the Ray Society for the publication of the first portion of Mr. Buckton's excellent monograph of the British Aphididæ, forming an octavo volume of 193 pages, with 38 coloured and 3 elementary plates. The family is divided into four sub-families,—Aphidinæ, Schizoneurinæ, Pemphiginæ, and Chermesinæ,—characterised by the variations of the wing-veins. The first of these sub-families is divided into sections, from the 7- or 6-jointed antennæ; those with seven joints forming thirteen genera, and those with six joints forming five genera. The present volume is confined to the first six genera of the Aphidinæ. An interesting introduction of 100 pages gives a general summary of the anatomy and natural history of the family, in which it is to be noticed that after stating the different opinions on the subject of honey-dew, the author "is very much of the opinion that the honey-dew, as *found upon leaves*, is of Aphis origin;" and that "future enquiry will clear up the question whether this liquid is identical with that discharged from the cornicles" (p. 43). It is further to be noticed that, in plate B, the rostrum of these insects is represented as having "three long setæ disengaged from the sheath: these are the representatives of the labium and maxillæ." This opinion is quite at variance with the generally-adopted view that the "rostral sheath" itself is the representative of the labium, and

that the setæ (four, not three, in number) represent the mandibles and maxillæ. The genus Syphonophora, being the most extensive in the number of its species (thirty-seven being described and figured), is preceded by a specific tabulation, which is not given in the genera Phorodon, Myzus, Drepanosiphum, Amphorophora, and Megoura. It is of course intended to give later specific characters and proper bibliographical references in an appendix, since the references, *e.g.*, to "Walk.," involve a search through the whole English entomological literature of the last thirty years.

### Diptera.

The following dipterous memoirs appear in the twenty-fifth volume of the 'Verhandlungen' of the Zool.-Botan. Gesellschaft of Vienna for 1875 :— Von Bergenstamm and P. Löw, on new Cecidomyiæ ; Dr. Grzegorzek, on new Mycetophilidæ ; Dr. Brauer, on a new Œstrus, parasitic on the Bonassus americanus, and on Œstrus Shuckardi and the larvæ of several other species ; Prof. Palin, on Austrian Diptera.

An excellent series of papers on the structure of the parts of the mouth and other organs of various families of dipterous insects, illustrated with highly magnified figures by Mr. Underhall, of Oxford, has appeared in 'Science Gossip.'

A complete synopsis of the sub-family of the gall-midges (Cecidomyides) is given by Messrs. Von Bergenstamm and Löw in the Vienna 'Verdhandlungen' for 1876, comprising a complete bibliographical list of works on the subject, a list of 463 described species, and of 143 species of which only the larvæ have been observed, together with a list of the plants attacked by these insects.

Count C. R. Osten-Sacken has continued his labours on the Diptera of North America, by the publication of the second part of his "Monograph of the Tabanidæ of the United States," in the 'Memoirs' of the Boston Soc. Nat. Hist., vol. ii., pt. 4., no. 4, with an appendix to the first part of his monograph : fifty-four species are described, of which nineteen are new; and forty-two species are recorded which have been described by other authors, but which remain unknown, unrecognized or doubtful. A list is also given of seventy-four species from Mexico, Central America, and the West Indies. Also an article on the North American species of Syrphus, and on some Diptera from the Island of Guadaloupe (Proc. Boston Soc., iv. N. xviii., part 2).

## Entomological Nomenclature.

The rules of zoological, and especially of entomological, nomenclature have attracted much attention during the past year, both in this country and in North America, where a Committee has been formed with a view to laying down some fixed principles, to obviate the terrible mischief resulting from the constant alteration of names on the ground of "priority." On this subject Mr. Samuel H. Scudder has published a "Historical Sketch of the Generic Names proposed for Butterflies, being a Contribution to Systematic Nomenclature," in the 'Proceedings of the American Academy of Arts and Sciences, New Series, vol. ii., 4to, Boston, 1875, pp. 91 to 293.

## Economic Entomology.

The establishment of a cabinet of specimens, illustrating the economic uses and injuries of insects, in one of our national museums, is a subject of congratulation to those who look at the science beyond the mere collection and description of specimens. This has been done in the Branch Museum of the South Kensington establishment, at the Bethnal Green Museum, by the care of Mr. Andrew Murray, who has for several years paid especial attention to this subject, and who has contributed the first part of a descriptive catalogue of its contents (comprising the wingless species of insects), which has been published by the Government department of Science and Art.

The Exhibition in the Jardin of the Tuilleries, in Paris, of a very extensive series of illustrations and specimens of Economic Entomology, is especially to be mentioned, being the third of the series, and which was entirely formed by the assistance of country naturalists and entomologists, none of the leaders of the science in France being contributors.

In the United States, Mr. Charles V. Riley, the State Entomologist of Missouri, has continued his labours, and has published his Eighth Annual Report on the noxious, beneficial, and other insects of that State, illustrated—as all his memoirs are—by admirable wood engravings; containing the potato-beetle, the army-worm, the rocky-mountain locust, the Phylloxera, and the singular butterfly whose caterpillar is known as the Yucca borer.

The ravages of the Phylloxera on vines continue unabated, and have become more and more widely spread. Numerous notices and papers on the subject have appeared in the various horticultural and other journals, including H. V. Haimhoffen's article in the twenty-fifth volume of the Vienna 'Verhandlungen,' whilst the different modes adopted for the prevention of the disease have been recorded in the 'Comptes Rendus' of the Académie des Sciences of Paris, and other journals. A most lamentable account of the result of the action of these insects in the vineries of some parts of France is given by M. Duchartre, of the Central Horticultural Society of France (Gard. Chron. January 13th, 1877). A summary also of the elaborate report made by Professor Mouillefert (who had been delegated by the Académie des Sciences to institute a series of experiments on the various proposed means of destruction of the Phylloxera) to the Académie, extending to 200 pages, is given in the 'Gardener's Chronicle' January 20th, 1877 (whilst this Address is passing through the press), from which it appears that of all the various chemical materials which have been suggested, only sulphur compounds have been found at all efficacious.

A curious memoir by Dr. F. A. W. Thomas on the action of the very minute mites of the genus Phytoptus, which he terms Acaroecidien, upon the leaves of many different species of trees and plants, appears in the thirty-eighth volume of the 'Nova Acta,' 1876, 4to, with three plates, showing the various modes in which the leaves are deformed by these minute creatures. A paper on the same subject by Dr. Löw appears in the twenty-fifth volume of the Vienna Zool. Bot. Ges.

It may be in the recollection of some of the members of the Society that, at the time of the potato murrain in 1845, amongst the various causes of the disease, it was suggested by Mr. Alfred Smee (whose death, on the 11th of January, 1877, we have to deplore) that it was the result of the attacks of a species of Aphis, to which he gave the name of Aphis vastator—an opinion which obtained but little support amongst naturalists. Within the last few years the microscopical investigations of various fungologists, especially of Mr. Worthington G. Smith, have clearly shown the disease to result from the attacks of a minute fungus belonging to the genus Peronospora. It appears, however, from an article in the 'Gardener's Chronicle,' for April 8, 1876, that

Mr. Smee had made a collection of not fewer than 360 microscopical slides illustrating the disease on its first outbreak, and on these being recently examined by Mr. W. G. Smith it was found that a large number of the preparations of the potato Aphis exhibited the Peronospora in different stages of growth, and a highly magnified figure of the legs of an Aphis is given, showing the spawn-threads running through the limb and bursting out in parts developing the oogonia and the antheridia of the fungus. In this manner, and not by the action of sucking or poisoning the juices of the plant by the insertion of the rostrum of the healthy Aphis, the disease may be said occasionally to result from the presence of that insect.

T. P. NEWMAN, PRINTER, 32, BOTOLPH LANE, EASTCHEAP, E.C.

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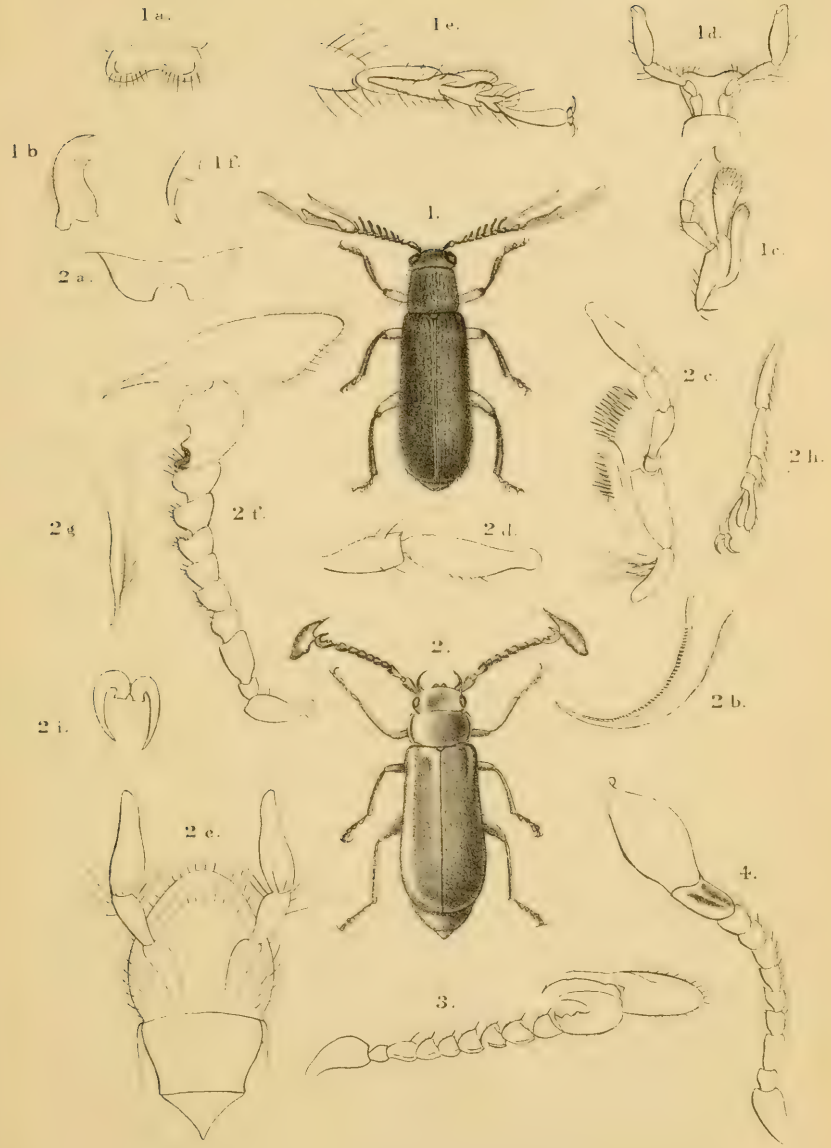


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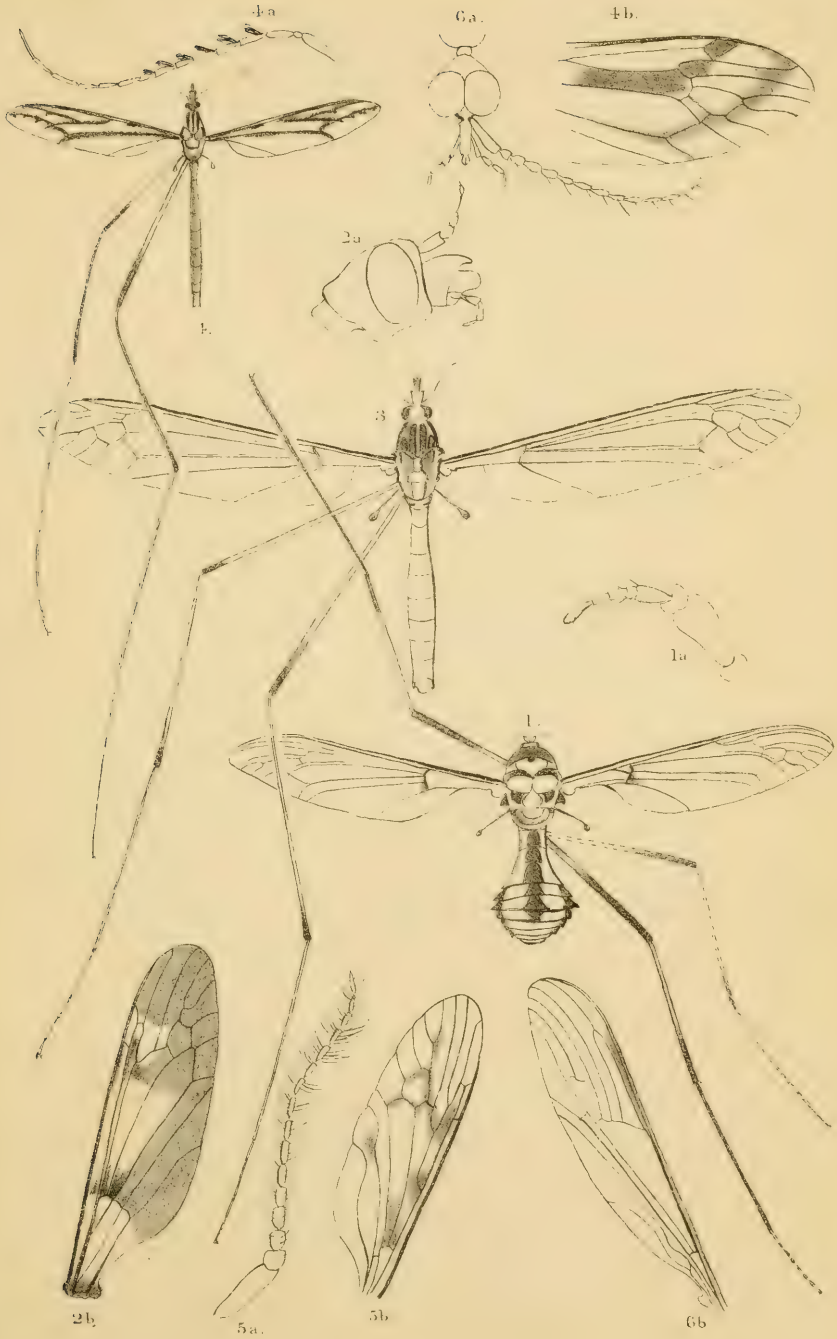


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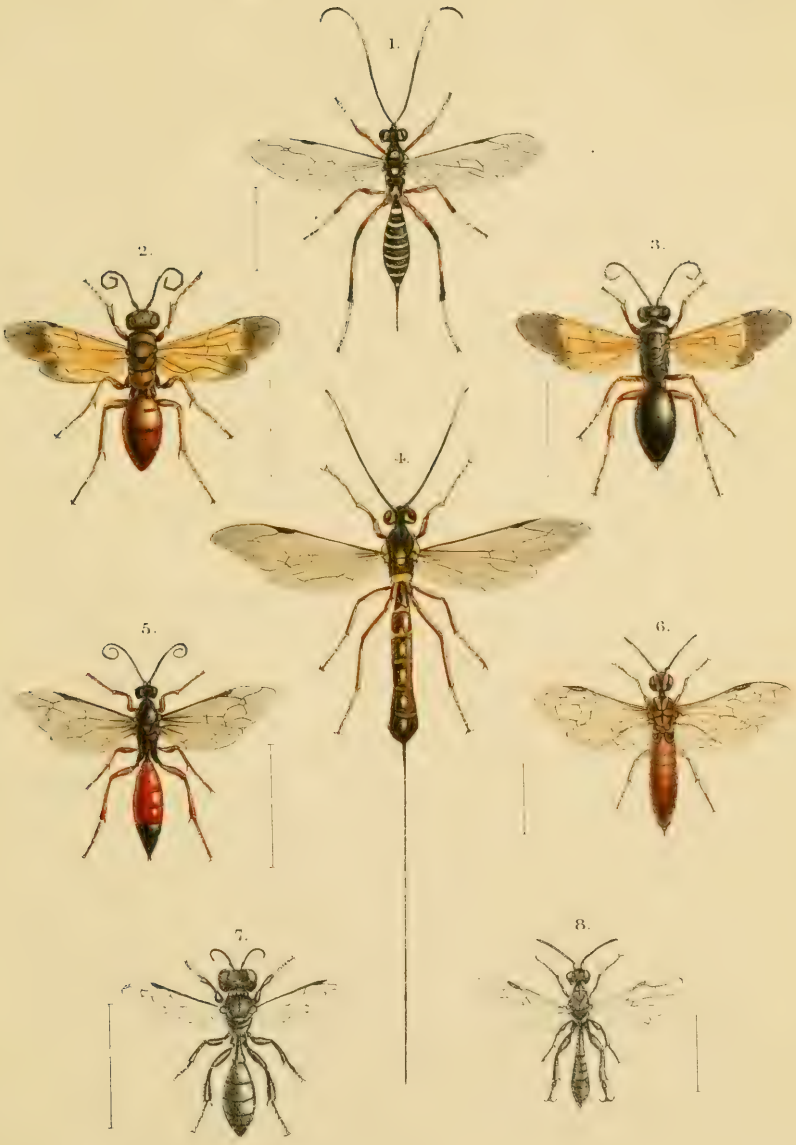


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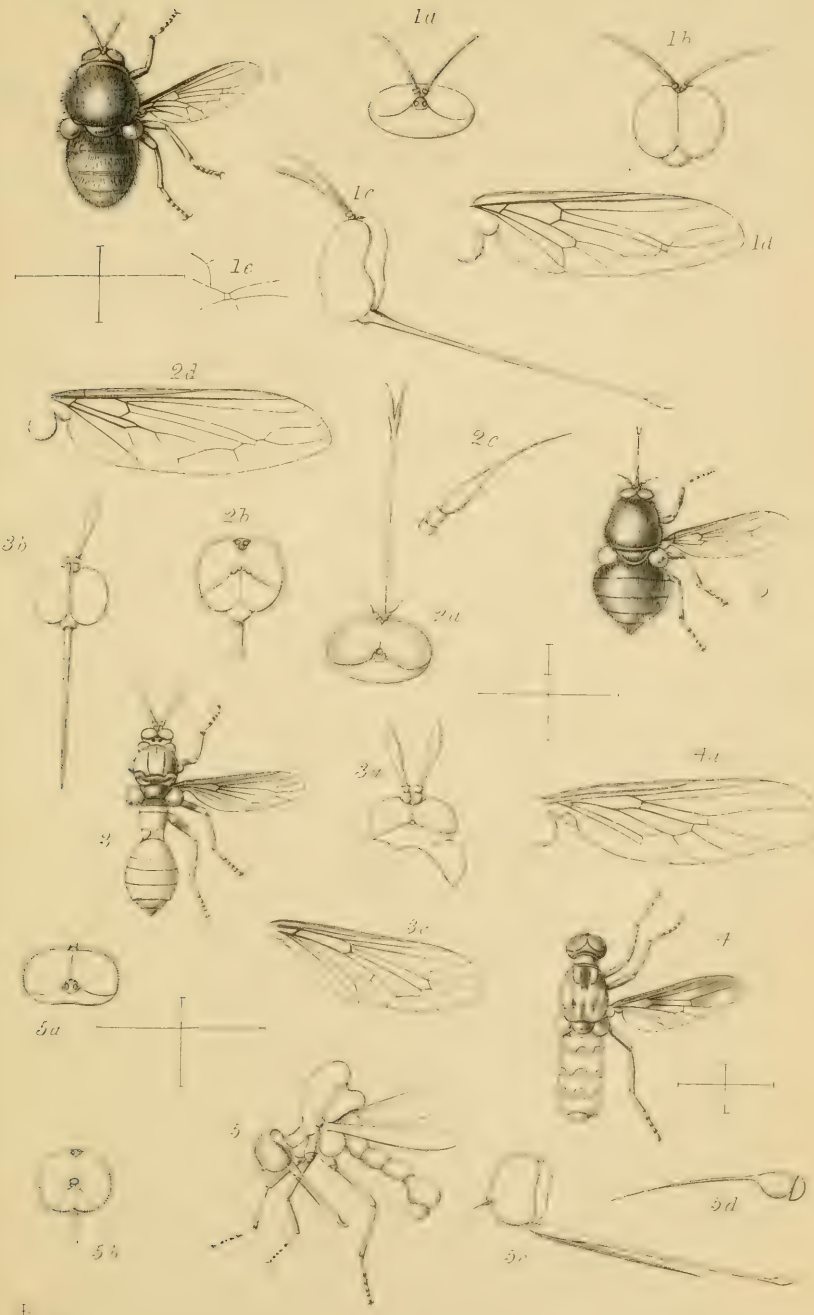


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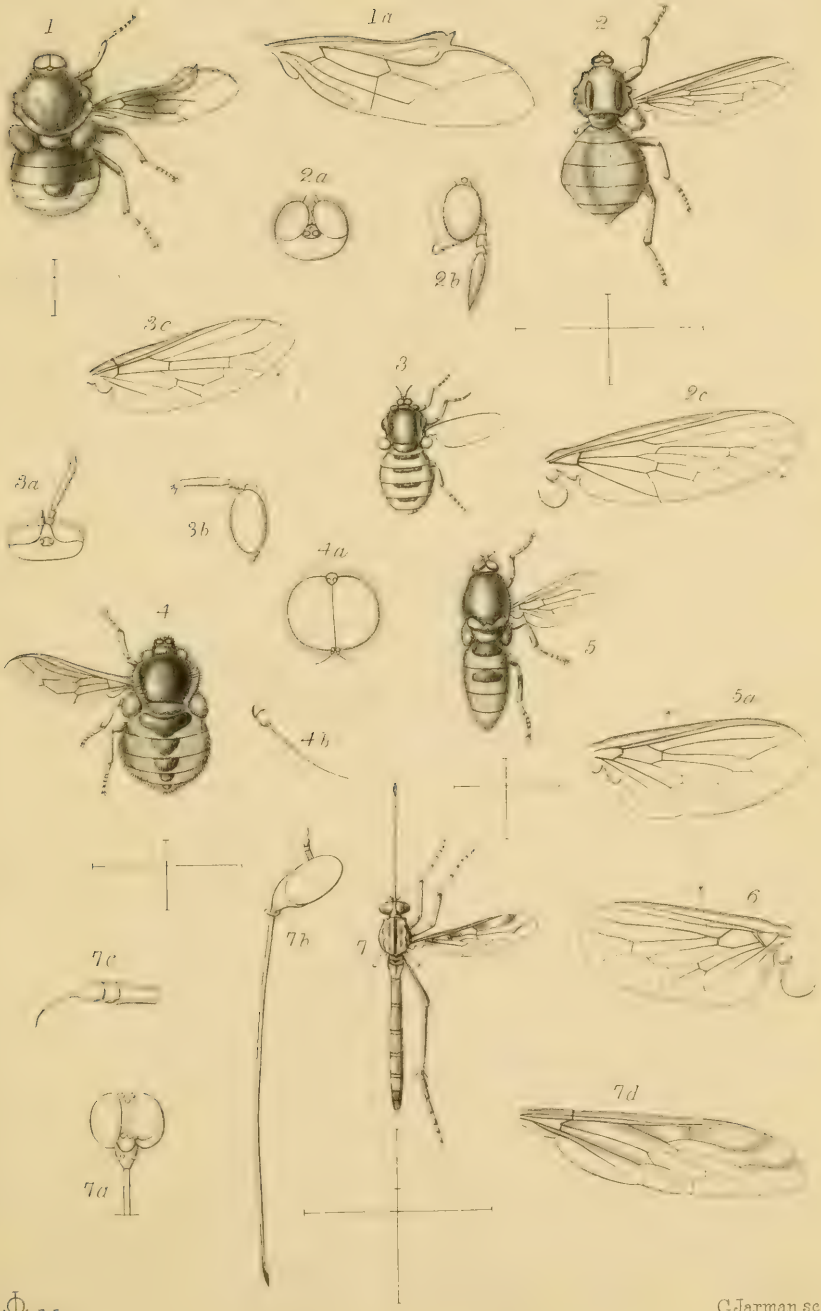


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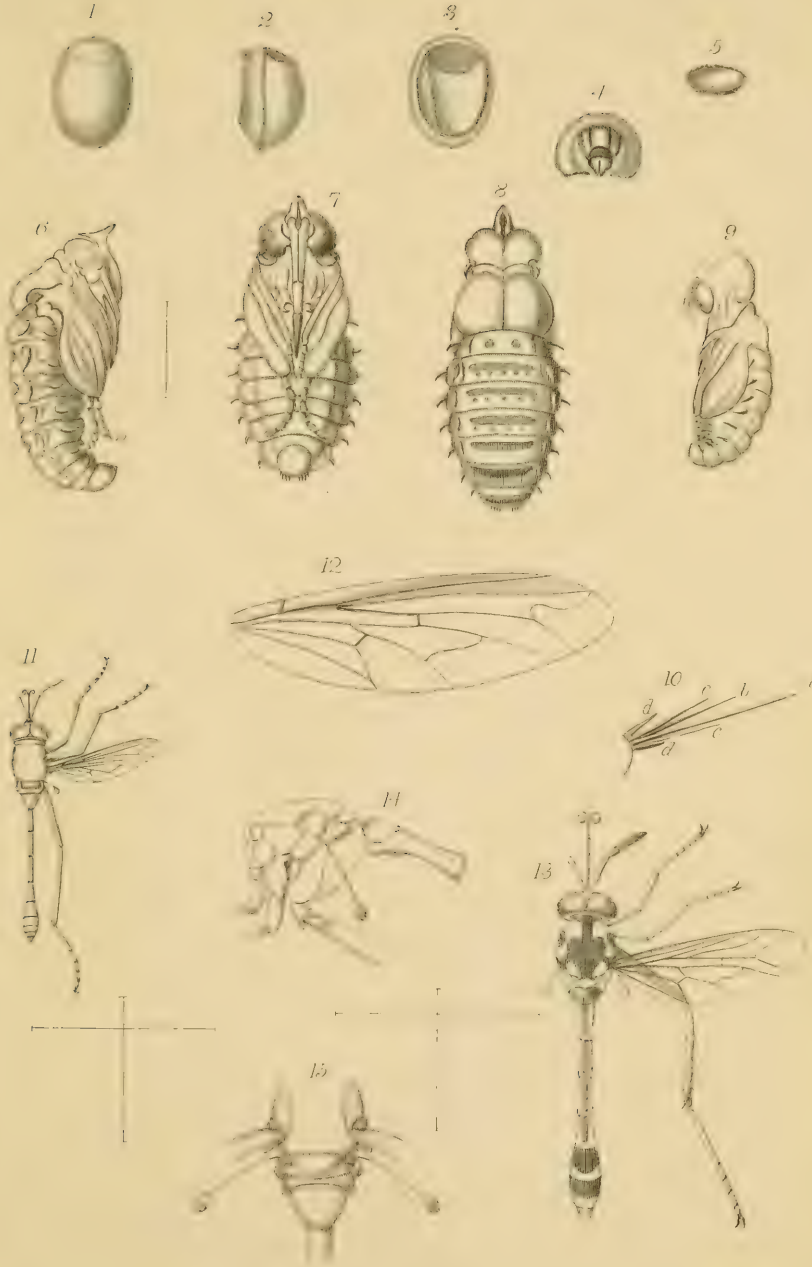


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